EVALUATION ASSESSMENT

*

Ocean Dumping and Marine Program

DRAFT

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SECTION 1 - INTRODUCTION

The Ministerial Task Force (MTF) on Program Review identified the Ocean Dumping and Marine Program (ODMP) as one of seven regulatory programs within Environment Canada. As such, it is subject to provisions of the Regulatory Reform Strategy announced by the federal government on 13 February 1986, including evaluation on a seven-year cycle.

The evaluation of ODMP in 1986-88 was agreed upon at meetings in August and September 1986 involving the Assistant Deputy Minister, Planning; the Deputy Comptroller General, Program Evaluation; and the acting Assistant Deputy Minister, Conservation and Protection (C&P).

The evaluation, which conforms to Office of the Comptroller General (OCG) procedures, involves two phases: evaluation assessment and evaluation study.

The evaluation assessment, which is a wide-ranging examination of the program, identifies problems and considers current and planned initiatives that would likely solve them. Where data are either unavailable or inadequate, the assessment recommends formal evaluation in the second phase, the evaluation study. The study will furnish not only comprehensive data and analysis, but also provide management with recommendations for resolving outstanding issues.

A steering committee, which includes representatives from the OCG Program Evaluation Branch, C&P'S Management and Emergencies Branch and the Corporate Planning Group (CPG) Evaluation Branch, provides guidance for the evaluation. The committee extended the scope of the present evaluation to cover the aspects of the ODMP that were not truly regulatory--an estimated 10 per cent of activity--as it was administratively convenient to evaluate the whole organizational unit.

One major concern of the evaluation team was the perception, emphasized by the Deputy Minister, that Environment Canada has had more than its share of study over the last few years. It was considered imperative that "evaluation stress" on managers be minimized and that evaluations in the environmental protection area not jeopardize the delivery schedule of the proposed Canadian Environmental Protection Act (CEPA), but rather support the process.

Program file review, literature search, and interviews with authorities on the subject areas were used to develop multiple lines of evidence during the evaluation assessment. As numerical data proved elusive, expert opinion and journalistic analysis were the primary methodologies employed.

The documents reviewed and persons consulted are listed in Appendices D and E respectively.

As far as external interviews were concerned, the evaluation team considered it essential to avoid "muddying the water" at a time when critically important consultations regarding CEPA were under way.

The fact that new legislation was in hand posed particular problems for the evaluators. There was little point in using scarce evaluation resources to duplicate the work of the task force that developed the Environment Canada request for authority to draft CEPA, or subsequent work on draft legislation. The study of problems with the old legislative and regulatory regime, and analysis of the preferred approach for new legislation had been done during the summer of 1986. As a result of this work, three Memoranda were submitted to Cabinet in 1986; a fourth, proposing to include provisions of the Ocean Dumping Control Act (ODCA) in the new legislation, was submitted in spring 1987.

The challenge facing the evaluators was to assess meaningfully, and (without second-guessing Cabinet's decisions) to produce a report that would further government environmental objectives.

SECTION 2 - CONSERVATION & PROTECTION ACTIVITIES

2.1 Mandate

Environment Canada came into being in June 1971 with the proclamation of the Government Organization Act (GOA) 1970. It was created from components within the federal structure that related to the natural environment. Subsequent organizational adjustments were made through GOA 1979 and by various Orders in Council.

At the present time, the Minister of the Environment is responsible for all matters over which Parliament has jurisdiction (not assigned to other federal government organizations) relating to:

- preservation and enhancement of the quality of the natural environment, including water, air and soil quality;
- renewable resources, including migratory birds and other non-domestic flora and fauna;
- water;
- meteorology;
- the national parks, the national historic parks and sites, and the heritage canals;
- enforcement of International Joint Commission rules and regulations concerning boundary waters, and questions arising between the United States and Canada related to the preservation and enhancement of the natural environment;

- the coordination of the policies and programs of the Government of Canada respecting the preservation and enhancement of the quality of the natural environment; and

- all other environmental matters that are by law assigned to the Minister of the Environment.

The act recognizes that the preservation and enhancement of the environment in Canada are responsibilities of each federal department, every provincial government, and the public. It gives the Minister of the Environment broad "advocacy" responsibilities to promote practices leading to the better preservation of the environment, and to cooperate with provincial governments or their agencies, or any organizations or individuals having similar objectives.

It also empowers the Minister to establish guidelines and advise heads of federal government organizations in all matters pertaining to the preservation and enhancement of the natural environment.

Finally, the act allows the Minister to enter into agreements with other governments or agencies to carry out programs for which he is responsible.

The present departmental mandate includes administrative responsibilities for 18 federal acts assigned to the department, and specific responsibilities for sections and provisions of 17 acts assigned to other departments or agencies.

Acts Administered by Environment Canada

The Ocean Dumping Control Act	C&P
The Canada Water Act	C&P
The Canada Wildlife Act	C&P
The Clean Air Act	C&P
The Department of the Environment Act	General
The Environmental Contaminants Act	C&P
The Game Export Act	C&P
The Historic Sites and Monuments Act	Parks
The International River Improvements Acts	C&P
The Migratory Birds Convention Act	C&P
The National Battlefields at Quebec Act	Parks
The National Parks Act	Parks
The Weather Modification Information Act	AES
The Lac Seul Conservation Act	C&P
The Lake of the Woods Control Board Act	C&P
The Canadian Environment Week Act	General
The National Wildlife Week Act	General
The Mingan Archipelago National Park Act	Parks

Other Acts Affecting or Partly Administered by Environment Canada

The Agricultural and Rural Development Act
The Animal Contagious Diseases Act
The Arctic Waters Pollution Prevention Act
The Oil and Gas Production and Conservation Act
The Canada Shipping Act
The Fisheries Act (Section 33, effluents)
The International Boundary Waters Treaty Act
The Motor Vehicle Safety Act
The National Energy Board Act
The National Housing Act
The Navigable Waters Protection Act
The Northern Inland Waters Act
The Pest Control Products Act
The Territorial Lands Act
The Department of Transport Act (Canals)
The Transportation of Dangerous Goods Act
The Hazardous Products Act

The MTF viewed current federal environmental legislation as a "back-stop" -- to come into play only when other levels of government fail to legislate effectively against polluters or to enforce their own laws. This interpretation implies that any deterioration in the environment caused by Canadian polluters can ultimately be blamed on an inadequacy of the federal environmental protection system.

The proposed CEPA was introduced in Parliament in June 1987. The inclusion of the ODCA in the new act is not expected to involve any substantive change in the effect of the ODCA provisions.

2.2 Objectives

The objectives of the Environmental Services Program, of which ODMP is part, are:

- to promote and enhance the maintenance of environmental quality;
- to promote and enhance the wise management and use of renewable resources; and
- to help adapt human activities to environmental conditions.

2.3 Organization

In 1986 two services, Environmental Protection and Environmental Conservation, were amalgamated to form C&P. The move caused some administrative discontinuities, but no adverse effects on program delivery. Chart 1 shows the most recent structure of Environment Canada; Chart 2 shows the structure of C&P.

At the regional level, C&P has directors general with broad operational responsibilities.

2.4 Previous Reviews

Many recent reviews have dealt in depth with environmental protection problems. Key findings have been considered during the development of the Federal Environmental Quality Framework and other work leading up to the drafting of the proposed CEPA. Among the more significant documents are:

CHART 1 - ENVIRONMENT CANADA

ENVIRONMENT
CANADA

NOVEMBER 1985

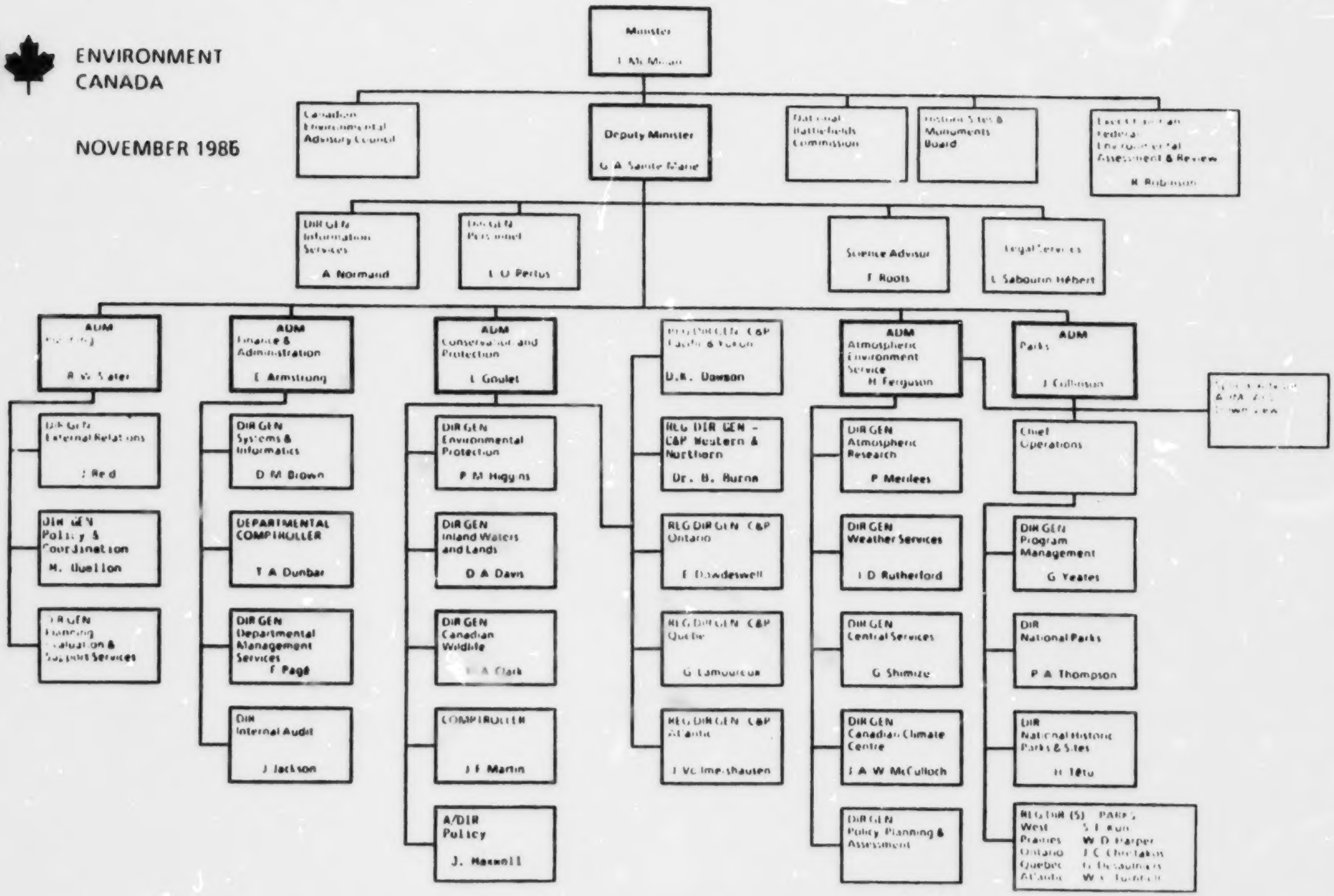
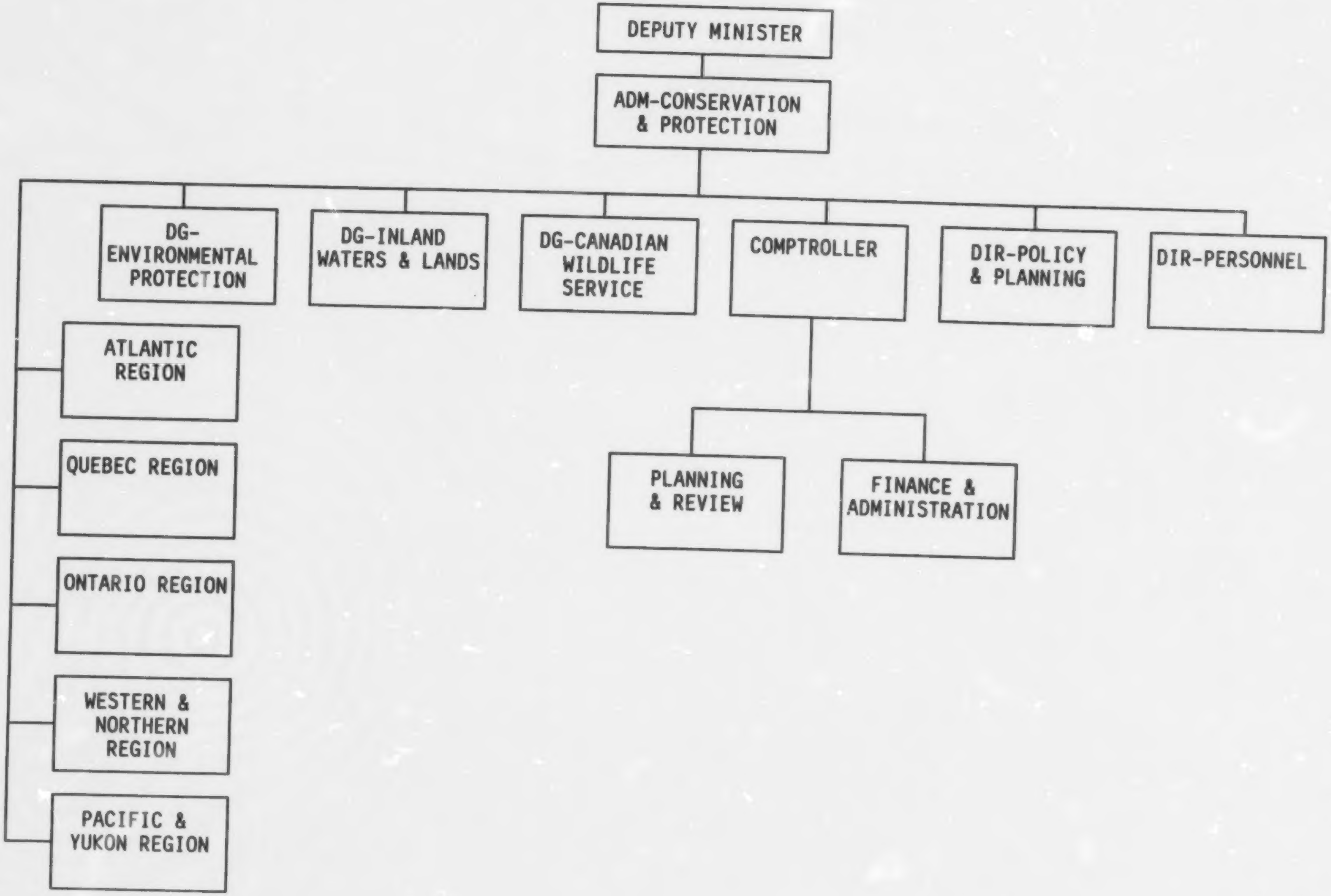

Minister
T McMillan
Canadian Environmental Advisory Council
Deputy Minister
G A Sainte Marie
National Battlefields Commission
Historic Sites & Monuments Board
Executive Chairman Federal Environmental Assessment & Review
R Robinson
DIR GEN Information Services
A Normand
DIR GEN Personnel
L O Pertus
Science Advisor
F Roots
Legal Services
L Sabourin Hébert
ADM Policy
R W Slater
DIR GEN External Relations
J Reid
DIR GEN Policy & Coordination
M. Ouellon
DIR GEN Planning Evaluation & Support Services
ADM Finance & Administration
E Armstrong
DIR GEN Systems & Informatics
D M Brown
DEPARTMENTAL COMPTROLLER
T A Dunbar
DIR GEN Departmental Management Services
F Pagé
DIR Internal Audit
J Jackson
ADM Conservation and Protection
L Goulet
DIR GEN Environmental Protection
P M Higgins
DIR GEN Inland Waters and Lands
D A Davis
DIR GEN Canadian Wildlife
A Clark
COMPTROLLER
J F Martin
A/DIR Policy
J. Maxwell
REG DIR GEN C&P Pacific & Yukon
D.R. Dawson
REG DIR GEN - C&P Western & Northern
Dr. B. Burns
REG DIR GEN C&P Ontario
E Dowdeswell
REG DIR GEN C&P Quebec
G Lamoureux
REG DIR GEN C&P Atlantic
J Vollmershausen
ADM Atmospheric Environment Service
H Ferguson
DIR GEN Atmospheric Research
P Merilees
DIR GEN Weather Services
J D Rutherford
DIR GEN Central Services
G Shimizu
DIR GEN Canadian Climate Centre
J A W McCulloch
DIR GEN Policy Planning & Assessment
ADM Parks
J Collinson
Chief Operations
DIR GEN Program Management
G Yeates
DIR National Parks
P A Thompson
DIR National Historic Parks & Sites
H Têtu
REG DIR (S) PARKS
West S F Kun
Prairies W D Harper
Ontario J C Christakos
Quebec G Desaulniers
Atlantic W Turnbull

CHART 2 - CONSERVATION AND PROTECTION


DEPUTY MINISTER
ADM-CONSERVATION & PROTECTION
DG-ENVIRONMENTAL PROTECTION
DG-INLAND WATERS & LANDS
DG-CANADIAN WILDLIFE SERVICE
COMPTROLLER
DIR-POLICY & PLANNING
DIR-PERSONNEL
ATLANTIC REGION
QUEBEC REGION
ONTARIO REGION
WESTERN & NORTHERN REGION
PACIFIC & YUKON REGION
PLANNING & REVIEW
FINANCE & ADMINISTRATION

* Two reports of the Ministerial Task Force on Program Review, May 1985:

  - Environment;
  - Regulatory Programs.

* Final Report to the Deputy Prime Minister of the Special Study Team on Environment Strategic Review (Desfossés Report), February 1986.

* Evaluation Framework for Environmental Protection; Peat, Marwick and Partners, October 1985.

* Results Definition Studies:

  - Environmental Protection;
  - Toxic Chemicals.

* Currents of Change - Final Report of the Inquiry on Federal Water Policy (Pearse Inquiry); September 1985.

* State of the Environment Report for Canada; Environment Canada, May 1986.

* Human Activity and the Environment: A Statistical Compendium; Environment Canada and Statistics Canada, May 1986.

* Canada's Environment: An Overview; Environment Canada, May 1986.

* Macdonald Royal Commission Report; August, 1985.

* Environmental Issues: The Challenges Ahead; Environment Canada, April 1986.

* A Study of Environmental Reporting in Canada; The Stakeholder Group on Environmental Reporting, March 1987.

* OECD Environmental Data Compendium 1987.

SECTION 3 - OCEAN DUMPING AND MARINE PROGRAM

3.1 Reporting Relationships

Accountability for the ODMP is indicated in Chart 3. The Head - ODMP, who is fully responsible for the national and international administration of the program, is four reporting levels below the Assistant Deputy Minister of C&P.

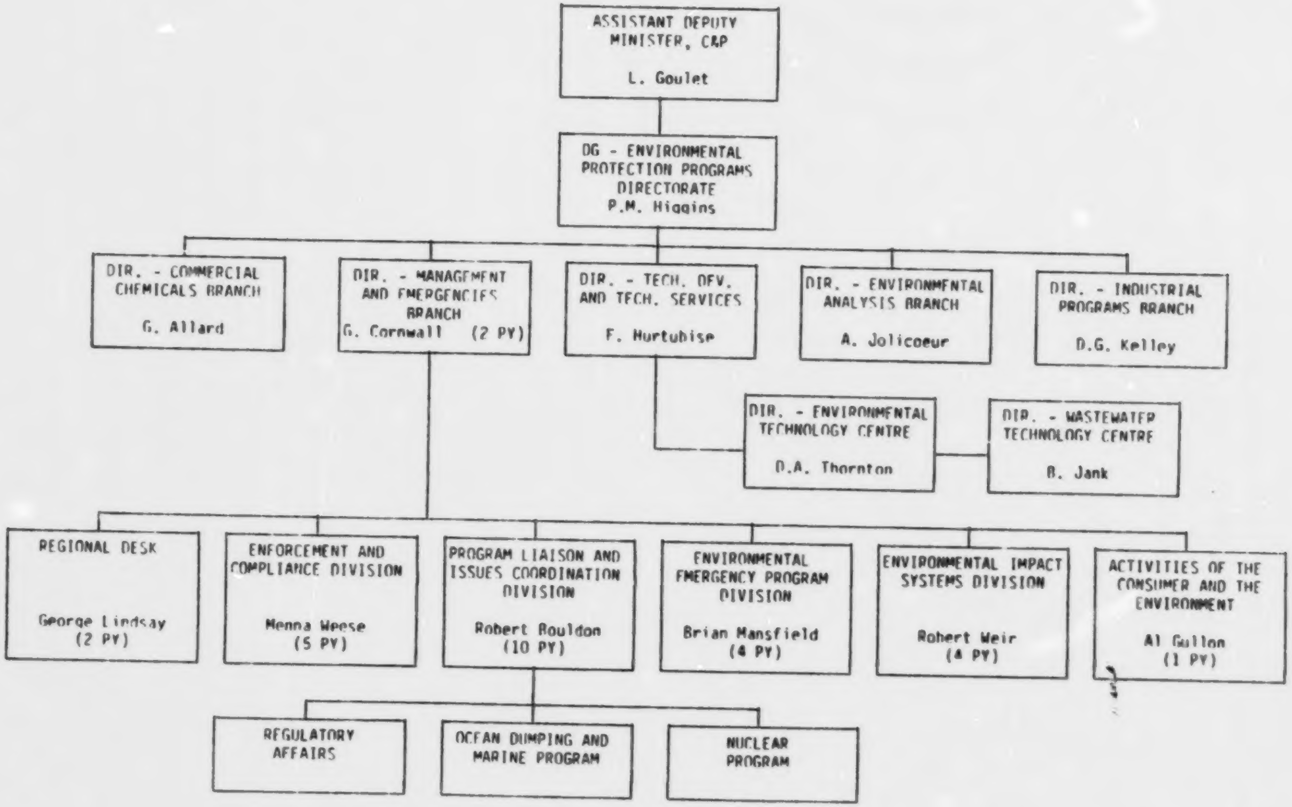
3.2 Program Mandate

The Ocean Dumping Control Act (ODCA), proclaimed on 13 December 1975 (with Regulations), reflects Canada's commitment to take effective measures to prevent marine pollution that would be caused by indiscriminate dumping at sea. It promotes control over all sources of marine pollution within Canadian jurisdiction. The ODCA is Canada's enabling legislation to conform to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter - the London Dumping Convention (LDC).

3.3 Program Description

The ODCA applies to all marine waters except those under the jurisdiction of a foreign state, and regulates the dumping or incineration of all materials at sea and the loading of waste on ships, aircraft, platforms or other artificial structures, for disposal at sea.

CHART 3 - MANAGEMENT AND EMERGENCIES BRANCH


ASSISTANT DEPUTY MINISTER, C&P
L. Goulet
DG - ENVIRONMENTAL PROTECTION PROGRAMS DIRECTORATE
P.M. Higgins
DIR. - COMMERCIAL CHEMICALS BRANCH
G. Allard
DIR. - MANAGEMENT AND EMERGENCIES BRANCH
G. Cornwall (2 PY)
DIR. - TECH. DEV. AND TECH. SERVICES
F. Hurtubise
DIR. - ENVIRONMENTAL ANALYSIS BRANCH
A. Jolicoeur
DIR. - INDUSTRIAL PROGRAMS BRANCH
D.G. Kelley
DIR. - ENVIRONMENTAL TECHNOLOGY CENTRE
D.A. Thornton
DIR. - WASTEWATER TECHNOLOGY CENTRE
B. Jank
REGIONAL DESK
George Lindsay
(2 PY)
ENFORCEMENT AND COMPLIANCE DIVISION
Menna Weese
(5 PY)
PROGRAM LIAISON AND ISSUES COORDINATION DIVISION
Robert Bouldon
(10 PY)
ENVIRONMENTAL EMERGENCY PROGRAM DIVISION
Brian Mansfield
(4 PY)
ENVIRONMENTAL IMPACT SYSTEMS DIVISION
Robert Weir
(4 PY)
ACTIVITIES OF THE CONSUMER AND THE ENVIRONMENT
Al Gullon
(1 PY)
REGULATORY AFFAIRS
OCEAN DUMPING AND MARINE PROGRAM
NUCLEAR PROGRAM

The act is backed by specific Regulations and Guidelines generally consistent with the articles and annexes of the LDC, although the ODCA introduced an additional restriction for "the disposal of any substance by placing it on ice in any area of the sea".

The act does not apply to discharges incidental to offshore mineral or petroleum exploration and development, normal operation of ships and other craft, or from land-based sources such as effluent pipelines. These are covered by other legislation.

Under the ODCA, a system of permits and inspections regulates the dumping of wastes at sea. A national research and development program is provided for under the act for the purpose of assisting in the administration and implementation of the act, specifically by providing informed guidance for decisions on whether to issue permits.

Except in emergencies, permits to dispose of waste at sea are required for dumping by Canadian ships, aircraft, platforms or other artificial structures in all waters. Foreign vessels require permits to dump in Canadian waters. Permits typically govern timing of the dumping, handling, storing, loading, and placement at the disposal site.

The terms and conditions of a permit vary with the substance being dumped. Some substances are, of course, prohibited. Schedules list materials according to the degree of danger they present to other legitimate uses of the sea, to human health, and to marine life. Based on the interim operational guidelines, however, the concentration prescribed in the ODCA regulations may be exceeded if the material to be dumped is determined to be "rapidly rendered harmless" on the basis of an appropriate biological test or tests. No permit is granted if the dumping is in violation of another act of Parliament or if a permit or licence for such dumping required under another act has not been obtained.

Decisions to deny or to grant permits may be appealed by the proponent or by any third party with reasonable grounds for intervention in the case. Appeals are handled at the departmental level if possible. On two occasions, Boards of Review have been established in accordance with ODCA Paragraph 12, but in both cases the proponents withdrew their complaints before the Boards completed their hearings.

ODMP managers estimate the cost to the federal government of the full, quasi-judicial, Board of Review process to be about $100,000 per case.

Inspectors are designated under the ODCA, and inspections are carried out to ensure compliance with the act, and terms and conditions of the permits. This permit and inspection activity is administered by four regional offices in Vancouver, Yellowknife, Montreal and Dartmouth.

Sanctions for dumping without a permit or for failure to comply with permit conditions, vary according to a schedule, and include fines of up to $100,000 for each offence, and seizure or detention of the ship or aircraft.

The Ocean Dumping Control Act Research Fund (ODCARF) provides scientific information about ocean dumping problems related to permit issuance; on the development, modification or appraisal of regional, national or international policies, regulations and guidelines; and on possible long-range effects of pollution and human-induced changes in the ocean ecosystem.

Interdepartmental liaison is provided through four Regional Ocean Dumping Advisory Committees (RODACs) and a National Program Managers' Committees, both chaired by Environment Canada. In addition, there is an Interdepartmental Committee on Sea Disposal of Radioactive Waste, chaired by External Affairs. The national Program Managers' Committee provides a forum for the coordination of C&P activities related to both domestic and international Marine Environmental Quality (MEQ) issues.

About 90 per cent of ODMP activity concerns questions directly related to the ODCA and regulations, but the broader scope of the program represents a logical and economical way of handling other important and complex marine issues.

Legislative and regulatory matters, such as the redrafting of CEPA to include ODCA provisions (in collaboration with the recently created Enforcement and Compliance Division of C&P) are also covered by the program.

3.4 Resources

Chart 4 shows resources assigned to the ODMP in 1987-88.

CHART 4

PROGRAM RESOURCES

	PERSON-YEARS	O&M ($000s)
Headquarters	2.0	80
Atlantic	4.5	26
Quebec	1.0	15
Western and Northern	1.0	11
Pacific and Yukon	4.5	42
NATIONAL TOTAL	13.0	174*

* Ocean Dumping Control Act Research Fund (ODCARF) adds $150,000 from the F&O A-Base budget.

SECTION 4 - ISSUES OF CONCERN

Issues that surfaced during the ODMP evaluation assessment were examined in terms of:

- current problems;
- any initiatives taken to resolve them; and
- any external factors that could influence them.

4.1 "Generic" Evaluation Issues

The OCG poses a series of "generic" questions that should be answered in the evaluation of any regulatory program. They are listed in Chart 5 in relation to parallel questions identified in Environment Canada's 1986 Regulatory Evaluation Plan.

4.1.1 Problem Behind the Program

Our increasing understanding of the health risks associated with some kinds of pollution and appreciation of the potentially enormous costs of post-mishap clean-up (if effective clean-up is possible) has forced Environment Canada and other government departments in Canada and abroad to adopt a policy of anticipate-and-prevent rather than the traditional approach of react-and-cure.

The ODMP is fully consistent with this policy. That is to say, it was conceived to prevent the development of problems that would involve insupportable socio-economic costs.

CHART 5 - PRE-DETERMINED EVALUATION ISSUES

	OCG Regulatory Reform Evaluation Issues	Environment Canada Regulatory Evaluation Plan
4.1.1	What is the economic or social problem that the regulatory program is intended to address? Does the problem still exist and, if so, to what extent? What would have to happen for the program to be deemed a success?	
4.1.2	How much amelioration of the problem has the regulatory program accomplished? What and how much would society lose if the federal government eliminated its program?	Causal relationships between regulation and changes in environmental quality identified by examination of indicators of environmental quality.
4.1.3	How much cost, and in what forms, has the program imposed over the review period upon society, the private sector and the government?	Costs of environmental regulation: -- direct enforcement, inspection, prosecution costs; -- compliance costs for industry; -- economic costs (competition from unregulated jurisdictions); -- impact on GNP, employment rate, etc.
4.1.4	Do the benefits achieved outweigh the costs of the program? If not, why is this so? To what extent would more resources improve the program's performance enough to make it cost-effective?	Benefits of regulation: -- avoided costs of eventual clean-up if action is deferred; -- maintenance of quality of life; -- health benefits (reduced illness, greater life expectancy).
4.1.5	Is the program well-designed to address the current problem? What is the degree of regulatee compliance with its requirements? Is cost recovery practiced wherever appropriate? To what extent is self-regulation feasible? Are any of the program's activities suitable for privatization?	Degree of compliance. Effectiveness of enforcement. Conviction:prosecution ratio.
4.1.6	Why is federal regulation still the best way for the government to deal with the problem being addressed in comparison with other available instruments? What alternatives to regulation are there?	Appropriateness of legislative approach (federal or provincial?). Appropriateness of regulations (enforcement by federal or provincial officers?). Alternatives to regulation.
4.1.7	Is the program equitable in its burden -- upon large and small regulatees, and upon regulatees located in different regions? Is it perceived as equitable and fair by regulatees?	Public perception of adequacy of regulations, of regulatory enforcement and of sentencing.

This statement may sound excessive, but the oceans cover 70.8 per cent of the earth. Their mean depth is 12,000 feet, and they contain about 317 million cubic miles of water. They therefore represent a large and important part of the earth's surface and, with air and land, constitute the human environment.

Their magnitude and considerable capacity to dilute pollutants and to regenerate through natural processes when contaminated, have, in the past, created an impression that the oceans represent an unlimited resource for waste disposal. However, says the Brundtland World Commission on Environment and Development, "In the last few decades, the growth of the world economy, the burgeoning demand for food and fuel, and accumulating discharges of wastes have begun to press against the bountiful limits of the oceans."

At recent Congressional Committee hearings on the dumping of plastic garbage at sea, New Jersey Representative William J. Hughes commented on, "the same 'out of sight--out of mind' mentality that has turned our oceans into the repository of last resort for sewage sludge, chemicals, and other refuse."

Our increasing knowledge of the pressures on the hydrosphere forces us to look carefully at the situation underlying these concerns. We may observe that:

- a number of waste materials are very toxic or otherwise dangerous even in minute quantities, for example, nuclear fuel cycle waste and dioxins*;

- some of these potentially harmful materials are very difficult to destroy; clean-up after an ocean spill or from the sea floor would be at best, difficult and costly, and at worst, impossible;

- the food chain has the ability to produce bioaccumulative effects, so that even small quantities of certain substances can be concentrated in organisms--most particularly fish--that are relatively high in the food chain that nurtures man;

- a number of deadly human and animal diseases, such as cancer, are definitely related to some pollutants and possibly related to others (with varying degrees of certainty);

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* Less than one millionth of a gram of TCDD (2,3,7,8 - tetrachlorodibenzo-para-dioxin) will kill a guinea pig. In test animals it causes cancer, cell mutations, birth defects, kills embryos, and suppresses the immune system which protects the body against disease. It is an accidental by-product of herbicide manufacture and combustion of organic materials, and has been implicated in the sudden and massive reproductive failure of several waterbird populations. It is found in human breast milk in quantities that have caused concern and, according to the Center for the Biology of Natural Systems, Queen's College, New York, "current environmental levels in the United States are causing a minimum increased cancer risk of 330 cases per million (population)".

- in addition to being mutagenic, some chemicals are teratogenic; Health and Welfare Canada and Statistics Canada data indicate a high incidence of fatal birth defects, as well as deaths from cancer, in the census divisions bordering the most heavily-polluted parts of the St. Lawrence River*;

- while our knowledge of environmental chemistry is increasing, we still have only a limited knowledge of the possible effects of many of the thousands of chemicals in use today and of the extent to which they may break down, or combine with other chemicals, to form new compounds with equally unknown characteristics (Chart 6 indicates the scale of the problem);

- one measurable certainty is the extent to which available landfill and waste-disposal sites, particularly those close to major cities, are filling up. The three-month odyssey of the Islip garbage barge brought the issue into focus, and the disposal of nuclear waste such as spent fuel rods, is a particular problem, as containment tanks are filled at many plants. Chart 7 indicates the scale of the problem in OECD countries, and Appendix F the progress already made in engaging with the problem. In April 1986, Worldwatch Institute reported that: "Not one of 26 countries currently relying on nuclear power is adequately prepared" to deal with the problem of decommissioning old nuclear reactors--many of which

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* Health and Welfare Canada/Statistics Canada, "Mortality Atlas of Canada, Volume 2" 1980, and Société pour vaincre la pollution (SVP) "Carte du fleuve Saint-Laurent intoxique", 1985.

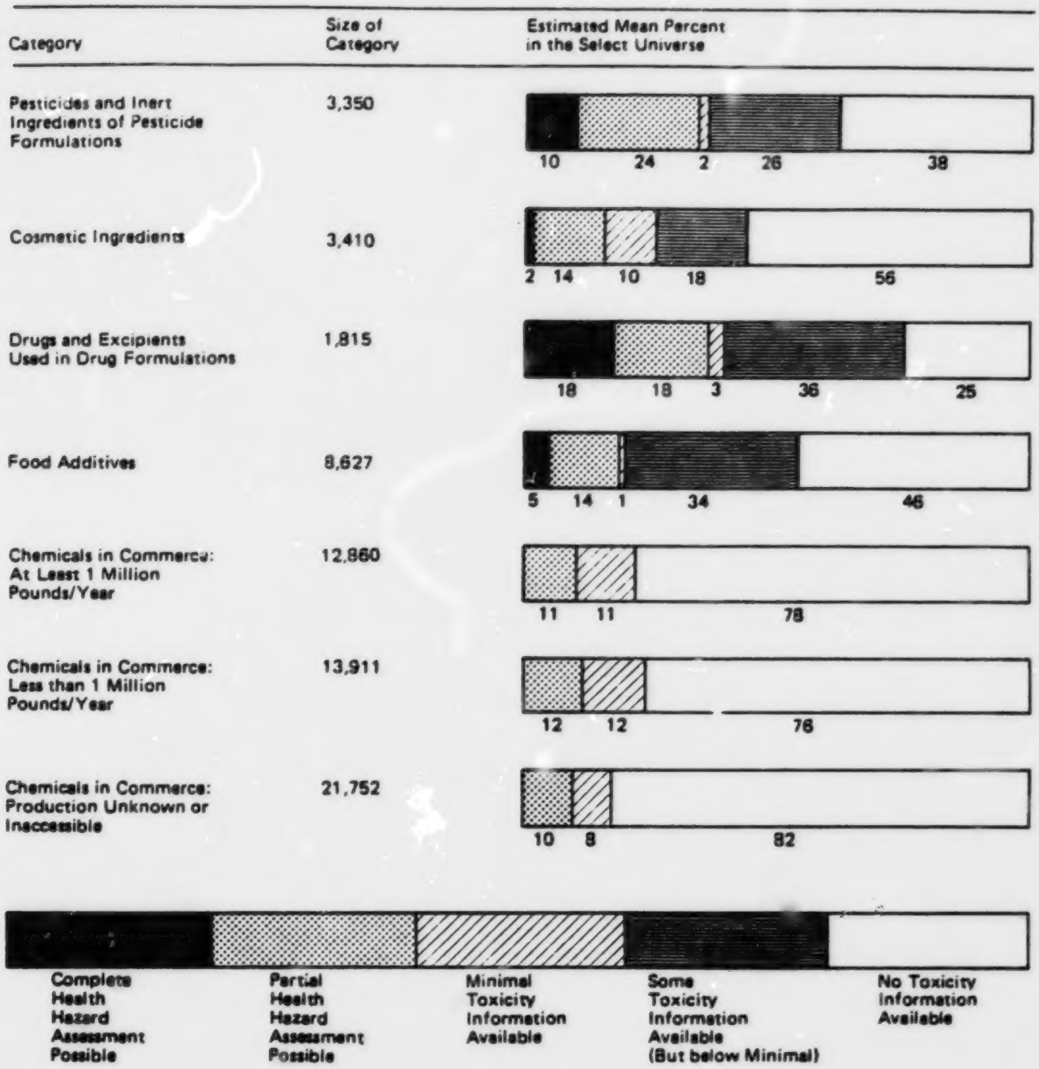

CHART 6 - EXTENT OF KNOWLEDGE OF HEALTH EFFECTS

U.S. ability to conduct health-hazard assessment of substances in seven categories of select universe, as reported in "Toxicity Testing: Strategies to Determine Needs and Priorities" published by the Steering Committee on Identification of Toxic and Potentially Toxic Chemicals for Consideration by the National Toxicology Program (Board on Toxicology and Environmental Health Hazards, Commission on Life Sciences, National Research Council). National Academy Press, Washington, 1984.

CHART 7 - ESTIMATED CUMULATIVE VOLUMES OF RADIOACTIVE WASTES FROM NUCLEAR POWER PLANTS IN OECD COUNTRIES

		Wastes from operation of reactors/ Déchets de fonctionnement des réacteurs			Reprocessing wastes/ Déchets de retraitement		
		Estimated GW-years GW-ans estimés	Spent fuel/ Combustible irradié (tonnes U)	LLW & ILW b) (m3)	HLW c) (m3)	Alpha d) (m3)	LLW & ILW (m3)
Canada	e)	360	72000	198000	..	..	.
USA/Etats-Unis		2250	78750	1200000	9000	168750	1100000
Japan/Japon		650	22750	357500	2600	48750	325000
Australia/Australie		-	-	-	-	-	-
N. Zealand/N. Zélande		-	-	-	-	-	-
Austria/Autriche		-	-	-	-	-	-
Belgium/Belgique		115	4025	63250	460	8625	57500
Denmark/Danemark		-	-	-	-	-	-
Finland/Finlande		50	2220	18100 f)	200	3750	25000
France		1250	43750	687500	5000	93750	625000
Germany/Allemagne		485	16975	266750	1940	36375	242500
Greece/Grèce		-	-	-	-	-	-
Iceland/Islande		-	-	-	-	-	-
Ireland/Irlande		-	-	-	-	-	-
Italy/Italie		69	3175	35750	260	4875	32500
Luxembourg		-	-	-	-	-	-
Netherlands/Pays-Bas		10	350	5500	40	750	5000
Norway/Norvège		-	-	-	-	-	-
Portugal		-	-	-	-	-	-
Spain/Espagne	e)	162	8250	82500	..	..	..
Sweden/Suède	e)	200	7000	110000	..	..	..
Switzerland/Suisse		60	2100	33000	240	4500	30000
Turkey/Turquie		-	-	-	-	-	-
UK/Royaume-Uni		300	39750	91000	5400	13125	600000
Yugoslavia/Yougoslavie		10	350	5500	40	750	5000
N.America/Amérique N.		2610	150750	1398000	9000	168750	1100000
OECD/OCDE-Europe		2701	127595	1393350	13540	165750	1617500
EEC/CEE		2391	116275	1232250	13100	157500	1562500
OECD/OCDE - Total		5961	301095	3148850	25140	383250	3042500
World/Monde - Total		8054	404362	4299970	31036	493800	3779500

NOTES:

a) Cumulative volumes of spent fuel and reactor and reprocessing wastes up to the end of the operating life (30 years is supposed) are estimated, on the basis of the nuclear programme of each country as now defined.

b) LLW:Low level wastes. ILW:Intermediate level wastes.

c) HLW:High level wastes.

d) Alpha:Alpha-bearing wastes.

e) Reprocessing wastes were not estimated for those countries that have not made a commitment on the reprocessing option.

f) Gross volume including packaging materials.

SOURCE: IAEA/AIEA

NOTES:

a) Volumes de combustible irradié et de déchets de réacteur et de retraitement cumulés sur toute la période de fonctionnement (qui est estimée à 30 ans). Ces volumes sont estimés sur la base du programme nucléaire de chaque pays tel qu'il est défini actuellement.

b) LLW: déchets faiblement irradiés; ILW: déchets moyennement irradiés.

c) HLW: déchets fortement irradiés.

d) Alpha: déchets à radioactivité alpha.

e) Les déchets de retraitement n'ont pas été estimés pour les pays qui n'ont pas pris d'engagement concernant l'option de retraitement.

f) Volume brut y compris des matériaux pour le conditionnement.

are reaching the end of their working lives, not to mention the problem of disposing of large quantities of low-level nuclear waste;

- "Civil nuclear energy programmes worldwide have already generated many thousands of tons of spent fuel and high-level waste," said the Brundtland Commission. "Many governments have embarked on large-scale programmes to develop ways of isolating these from the biosphere for the many hundreds of thousands of years that they will remain hazardously radioactive. But the problem of nuclear waste disposal remains unsolved....There is particular concern about future recourse to ocean dumping and the disposal of contaminated waste in the territories of small or poor states that lack the capacity to impose strict safeguards. There should be a clear presumption that all countries that generate nuclear waste, dispose of it within their own territories or under strictly monitored agreements between states";

- the "Not In My Backyard" syndrome means it is increasingly difficult to find sites for the disposal of even relatively harmless waste;

- continuing population pressures mean that no solution to the world's waste disposal crisis can be expected without a general switch to industrial and commercial practices that minimize waste production* and place heavy emphasis on recycling*, with nuclear fusion (one hopes) providing a safer alternative to fission for electric power generation;

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* For example, pollution in the pulp and paper industry can be significantly reduced, if not eliminated, by the adoption of the Rapson-Reve closed cycle process which reportedly can achieve zero discharge and increase yield, while saving fibre, water, energy and chemicals, as well as reducing specific treatment costs.

- population pressures and the results of other human failures to manage the environment proactively leave many people short of food; humanity is more and more dependent on what the seas can produce; in simple economic terms, investment in protecting the oceans is investment in industries, such as fishing and aquaculture, that will be of increasing importance to mankind;

- ocean dumping aside, the hydrosphere is subject to pollution by several other pathways, which are examined in greater detail in Appendix H.

The essential purpose of ODMP is to buy time for humanity to solve the problems of disposing of the waste our species produces, without doing possibly irreparable damage to a vital part of the human environment.

The program will have succeeded if we develop adequate and comparatively inexpensive alternative means of waste disposal before serious damage is done to the oceans. Rigorous and universal enforcement of regulations, based on the cradle-to-grave philosophy in the case of radioactive and toxic materials, may, however, be necessary for some years to come.

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* Production of aluminium from bauxite ore uses 20 times as much electricity as production from recycled cans, etc., not to mention the cost of mining and freighting bauxite from source (e.g. Jamaica) to Canadian smelters.

Progress would be measured by steps taken to limit production of non-recyclable materials at an absolute minimum and in recycling the remainder. "The only way to deal with toxic chemicals", says Dr. Barry Commoner, director of the Center for the Biology of Natural Systems at New York's Queen's College, "is to stop producing waste." The same is true for such non-toxic problem substances as plastics.

4.1.2 Amelioration Resulting from ODMP

Insofar as ODMP is conceived as a preventive program, its value is better assessed by comparing the current situation to what might have happened without the program, rather than by looking for specific improvements in ocean quality between 1975 and 1987. It is too difficult to isolate the quantifiable impacts of ODMP from those of a variety of other pressures, both for improvement and for degradation, for that kind of approach to result in anything more guesswork.

We can, however, look at global considerations such as the extent of international cooperation in solving ocean pollution problems, and at the contribution that Canada's ODMP has made to that.

One of the objectives of the 1988 Conference on Atmospheric Change is to "maintain and enhance Canada's leadership role in the stewardship of the global commons". Canada's support of the LDC is fully consistent with this sense of national responsibility, and our action in establishing ODMP may reasonably be supposed to have contributed, along with the manifest dangers of inaction, to encouraging responsibility in the international community and a trend away from uncontrolled dumping.

For Canada is a maritime nation bordering on three oceans, with the longest coastline in the world and the second largest nationally controlled continental shelf. It has industries that use the oceans' resources (commercial and recreational fishing, aquaculture, oil and gas exploration and development, mining of aggregates, recreation) and also industries that supply ocean users with goods and services. These waters are worth billions of dollars in economic terms; their cultural and social value are inestimable. Much of this value depends on their freedom from serious pollution.

It is, then, vitally important to keep our estuaries and coastal waters clean. But the position Canada takes on issues of ocean protection has a symbolic importance considerably greater than the control of pollution within our own waters. Canada's support for the LDC is one way of meeting our international responsibilities and exerting moral pressure on all countries that might otherwise be tempted to use the oceans as garbage dumps. The scientific and technical expertise gained through administering the ODCA can also be applied by Environment Canada to other issues concerning marine environmental quality, such as offshore energy development, and transferred, or even marketed abroad.

Prior to passage of ODCA, dredging, dumping, disposal of old ships, and most other disposal activities, took place with only cursory consideration for the environment. In many cases dump sites were recommended by local F&O officers and fishermen. The main consideration was the protection of the fishery, which although important, did not necessarily ensure protection of wildlife and other biota, or other interests, such as recreation. The lack of a formal review and inspection process meant there was no guarantee that dumping would be carried out in an environmentally suitable manner.

Information on what was dumped before 1975 is scarce. Concern for the marine environment was mainly limited to physical impact. For example, the Marine Environmental Branch would become involved when conflict arose between, for example, the oil and fishing industries. Levels of contamination in the dumped materials were not properly reviewed. However, the evaluation team found no evidence of a major marine pollution problem in Canadian waters or involving Canadian vessels prior to passage of ODCA. Since that time though, there has been progressive development of complex industrial technology producing large amounts of waste which must be disposed of without causing intolerable effects.

It should be observed at this point that ODMP assumes that there is close to 100 per cent compliance with ODCA Regulations*. Evidence of violations could be provided by port authorities or by the Canadian Coast Guard, but such evidence is lacking.

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* Gulf Canada Corp. admitted to dumping almost 1,200 tonnes of excess cement and barite (mineral $BaSO_4$) into the Beaufort Sea, near to the Amauligak drilling site, and was convicted in August 1987 of dumping without a permit and fined $180,000. Territorial Court Justice R.M. Bourassa said the company committed a "deliberate and informed contravention" of the law on 23 September 1986 on the order of F.E. Mitton, manager of Gulf's drilling division. Mitton had failed to seek the required permit. When another Gulf official did request a permit from Environment Canada on 25 September, he was turned down. Even so, the dumping continued through 30 September. The judge recalled that before Mitton gave his order, he considered several options, including storing the wastes in Tuktoyaktuk. However, the estimated storage costs ranged between $9,000 (in containers) and $100,000 (in tankers), and so the judge concluded that the dumping was seen by Gulf as a way of getting rid of the wastes "conveniently and quickly". The fact that the dumping only came to ODMP attention when the second Gulf official applied belatedly for a permit, raises some concern that it might be possible to dump relatively large quantities of industrial waste without detection.

The conviction and fining ($100,000) of PanArctic in 1985 was the result of "whistle-blowing" by a disgruntled employee. Of the three ODCA prosecutions to date, only the Crown Zellerbach case resulted from inspection activity.

The evaluation team, on balance, considers that the ODMP assumption of a high degree of compliance is justified, but notes that positive confirmation of this is elusive and that complacency could lead to unpleasant surprises. Under ODCA, ODMP can take effective measures to prevent marine pollution. ODCA controls have limited the substances that can be dumped and location of dumping operations so that adverse effects on marine environmental quality are minimized.

Existing Canadian legislation is primarily concerned with environmental protection and with specific review criteria. It places a heavy reliance on availability of scientific and technical data to assess the environmental impact of dredging and disposal operations. And when dumping appears undesirable, Environment Canada is committed to exploring all environmentally sound options for managing wastes. If ocean dumping is not permitted, Environment Canada will work with the appropriate federal and provincial agencies and with private industries to investigate alternative disposal methods.

By no means the least important benefit that the ODMP confers is the help that it gives to those planning to dump at sea. Doubt and uncertainty are two of the most costly enemies of business. Without the science-based permit system based on ODCA, its businessmen would have to make their own decisions on dumping. If they made a mistake, they would be liable to prosecution under the Fisheries Act which allows for fines of up to $100,000 per day for the second and subsequent days on which an offence is committed (Section 33).

While it is to be supposed that public servants would offer what advice they could, in the absence of the science-based infrastructure and processes that underlie

ODCA, there would be an increased probability of mistakes. The harnessing of "best available technology" and scientific knowledge, to the permit system, is of real value in averting problems both for society and for business.

The availability of government approved permits may be supposed to eliminate or reduce the likelihood of civil litigation between fishing and dumping interests, which could be a real possibility in some areas in the absence of a regulated system.

Substantial progress has also been made over the past decade in monitoring the marine environment, in studying its current state, and causes of its deterioration. The question of what would happen if the ODMP were terminated, international relations issues aside, is closely related to the problem raised by the MTF of over-regulation and conflicting regulation which will be addressed below.

4.1.3 Costs of Regulation

The costs to a company or individual of complying with ODCA lie in preparation of a documented application for a permit, which may amount to several thousand dollars*, depending on the data which are required, and a fee of up to $1,000 depending on the complexity of the application.

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* The evaluation team estimated that total annual costs to proponents are in excess of $1.5 million, on the basis of evidence that proponent research is 10 times the level of the research funded by the $150,000 ODCARF. This estimate may not capture research costs associated with applications that one billed by the proponents as a result of negative research results at the outset.

However, anyone looking at the possibility of ocean disposal of waste must comply with a maze of legislation--up to 22 acts administered by five departments--to ensure that there will be no breach of federal or provincial environmental regulations. Chart 8, which shows the most important federal acts, indicates that there are only three areas of major conflict between regulatory regimes. Satisfying the environmental provisions of one department may not, however, be enough to satisfy those of another.

The MTF said:

> "Private sector (oil and gas industry) opinion of ODCA is unfavourable, not so much of its objectives but of its administration and overlap with other legislation.
>
> "Industry views ODCA as 'stand-alone legislation'; it in fact constitutes a legislative back-stop if other federal or provincial agencies specifically charged with offshore regulation fail to measure up.
>
> "A specific irritant is the actual or potential invoking of ODCA to regulate abandonment of artificial islands in Beaufort Sea offshore drilling. On abandonment, the islands could pose a hazard to both the environment (if toxic substances and debris are left on them) and navigation." (p. 214.)

The current administrative arrangements whereby the abandonment of artificial islands comes under INAC's Territorial Lands Act is under review. Companies are

CHART 8 - INTERPLAY/OVERLAP BETWEEN ODCA AND OTHER LEGISLATION IN TERMS OF SUBJECT MATTER

	Canada Shipping Act Part XX – Sections 728, 730, 752	Oil and Gas Production and Conservation Act	Fisheries Act (Section 33)	Environmental Contaminants Act	Navigable Waters 19.23 Protection Act (Section 3)	Arctic Waters Pollution Prevention Act (Section 4 & 18)	Transportation of Dangerous Goods Act	Clean Air Act	Migratory Birds Convention Act	Provincial/Territorial (1) Legislation	Others (2)
Ocean Dumping Control Act (EC)		X	X			X					
Canada Shipping Act (TC)											
Oil and Gas Production and Conservation Act (DINA, EMR)											
Fisheries Act (F&O)											
Environmental Contaminants Act (EC)											
Navigable Waters Protection Act (TC)											
Arctic Waters Pollution Prevention Act (TC, DINA, EMR)											
Transportation of Dangerous Goods Act (TC)											
Clean Air Act (EC)											
Migratory Birds Convention Act (EC)											

(1) As only the Supreme Court of Canada can make definite judgements on whether conflicts exist, the Evaluation Team reports on client and management perception rather than law. (Section 4.3 — 'Constitutional Mandate' — will further discuss this issue.)

(2) Certain other acts, including the National Harbours Board Act and the Public Works Act, could also have some overlap relationship.

advised that the abandonment of artificial islands should be consistent with the intent of the ODCA, although permits for abandonment may not be required if a suitable review and enforcement mechanism exists.

The MTF also said:

> "The legislation associated with ODCA, and the concomitant advisory bodies," the MTF continued, "comprise a tangled web of regulation and regulatory process, especially in the North. There, the Arctic Waters Pollution Prevention Act (advisory body: AWAC - Arctic Waters Advisory Committee); the Oil and Gas Production and Conservation Act (advisory body: COGLA - Canada Oil and Gas Lands Administration); the Ocean Dumping Control Act (advisory body: RODAC - Regional Ocean Dumping Advisory Committee) and the Fisheries Act. . . all converge to bemuse and confuse those planning an exploration or development project. The latter often believe the Fisheries and Oceans (F&O) or Environment personnel are using their legislation to thwart economic development that has been legitimately licenced elsewhere." (p. 215.)

Some Environment Canada executives feel that this special problem is the Arctic was overstated, and the problem appears to be considerably less serious south of the sixtieth parallel. One recent study* notes that the adversarial approach that had characterised relations between proponents and regulators in the early days of ODCA, had now been replaced by a situation in which there was much better mutual understanding and a reasonably good working relationship.

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* MacLaren Plansearch/Lavalin, 1982, for Transport Canada.

The complexity of regulation that baffled the MTF still remains, however, but the evaluation team perceived this as a problem of too many jurisdictions and regulatory regimes operating in the same environment, with minimal coordination and sometimes of degree of interdepartmental rivalry, rather than a problem with ODCA, per se.

Quite apart from the costs to industry of multiple approaches to government, and the inevitable delay and uncertainty that the jurisdictional confusion imposes, the regulatory system as a whole is inevitably more costly and inefficient for the government than a clean, efficient "one window" approach would be.

The regulatees cannot always use the cheapest* means of waste disposal--offshore dumping, abandonment on ice or incineration at sea. Detoxifying materials for safe disposal, or transporting them from oil exploration or dredging sites may be expensive. Decreased oil exploration in the last few years has greatly reduced the magnitude of this problem, but the possibility of higher oil prices may result in renewed activity.

Different types of industries are similarly affected. In the Atlantic, for instance, there is an economic pressure for designation of ocean dumpsites for fish offal close to shore, as a result of decreasing markets for this by-product.

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* "Cheapest" in this sense may, of course, prove very expensive for society as a whole at some point in the future, in terms of lost fishing grounds, breeding habitat and shellfish beds, destruction of the aquaculture industry, or permanent contamination of the oceans with toxics.

The demands of development and protection agencies cause delays because environmental impact analysis is a lengthy and costly process. Given the already high cost of oil exploration, for example, delay in making a decision on a permit application adds to the cost, and understandably annoys the regulatee.

As noted, the cost to government as a whole may be quite considerable because of the inter-jurisdictional confusion reported by the MTF. But as far as Environment Canada is concerned the cost of issuing a permit may be calculated as follows:

CHART 9 - ADMINISTRATIVE COSTS

Person years x average salary (12 x $40,000)	$480,000	
Personnel benefits (25 per cent of salaries)	$120,000	
O&M expenses	$180,000	
ODCARF (from F&O A-Base)	$150,000	
Total cost per year	$930,000	
Number of permits (10-year average)	159	= $5,849

Average administrative cost per permit: $5,849.

While even the maximum fee of $1,000 falls well short of full cost-recovery, it must be noted that no fee is collected for between 60 and 70 per cent of permits issued, as that percentage of the applicants for permits are federal government departments.

4.1.4 Cost-Benefit Relationships

The cost to Canada of supporting the LDC is low when measured against the benefits of a worldwide approach to combatting pollution of a vital resource. Many environmental problems are global and must be handled with the cooperation of other countries or not at all. The extent of international cooperation focussed on the LDC, as exemplified by the moratorium on dumping of nuclear waste reported in Appendix F, may be of real value to humanity, representing a model that could and, indeed, must be followed in other areas of environmental protection.

Expenditures on Environment Canada's ODMP appear modest when balanced against the possible consequences of termination of the program. This holds true even given the most optimistic view of human nature and an equally optimistic prediction of the effect of uncontrolled waste disposal in oceans. There is a strong public perception that what is at stake is not just the future of Canada's fishing industry, nor the survival of a few species of whales, but the survival of the planet and its preservation for future generations.

Improved coordination of government activities might be expected to improve cost-benefit ratios. Both F&O and Environment Canada have coordinative responsibilities relating to the marine environment and this issue is discussed in Section 4.2. Even within Environment Canada, several different directorates and divisions have responsibilities for the marine environment, although the overlaps are far less costly than the interdepartmental ones. The various programs are listed in Chart 10; the Marine Environmental Quality (MEQ) issue within Environment Canada is presented in Section 4.4 below.

CHART 10 - OCEAN RELATED PROGRAMS OF ENVIRONMENT CANADA

PROGRAM	SERVICE	RESOURCES (1986-87 EST.)	
		PERSON-YEARS	O&M ($000S)
Ocean Dumping and Marine Program	C&P	12	180
Marine Climate Services	AES	4.5	817
Marine Weather Services	AES	28.5	368
Climate Research	AES	5	630*
Ice Services Program	AES	64.3	17 389.6
Industrial Discharges	C&P	35	500*
Offshore Oil, Gas and Mineral Resources	C&P	9	55
Transportation	C&P	3	55*
Shellfish	C&P	6	120
Coastal Construction	C&P	2	14
Environmental Emergencies	C&P	9	99*
Marine Parks	Parks	2.5	116
Migratory Birds	CWS, C&P	N/A	N/A

Source: Fisheries and Oceans, 1986: Federal Inventory of Ocean-Related Activities.

* Not all resources are used for marine aspects of the programs.

4.1.5 Program Design

4.1.5.1 Program Logic

The permit approach used by ODMP is sound, allowing for case-by-case decisions based on the merits of individual applications. Experts in the areas most affected by the proposed activity, for example, fish habitat, have their say, and most issues can be resolved on the basis of technical factors.

All laboratory analyses related to a specific application are undertaken by the proponents. This tends to discourage applications in respect of inappropriate substances or areas where problems might arise, as does the requirement for fulfulling other application and regulation requirements.

Ninety per cent of applications are approved. Of rejected applications, two were appealed formally in recent years but both appeals were withdrawn before hearings were conducted.

An unrecorded percentage of ocean dumping inquiries (e.g. relative to municipal garbage disposal) are discouraged and alternatives suggested at the pre-application stage.

The theoretical structure of the ODCA permit system, outlined in Chart 11, depends on the availability of marine environment data and hazard assessment*, or the ability to generate and interpret these data quickly and accurately enough to be useful to decision-makers.

The scientific database remains limited, and basic or back-up research capability is provided through ODCARF. The fund is financed from the F&O A-base, according to a 1979 interdepartmental agreement, and so ODMP managers needing research have to work through another department. The question of research is dealt with in detail in section 4.2.

In seeking a dumping permit from ODMP, proponents are required to furnish certain technical and scientific data on the physical, chemical and biological properties of the material to be dumped, as a basis on which the environmental effects of the dumping operations can be assessed and minimized. Applying "polluter pay" or

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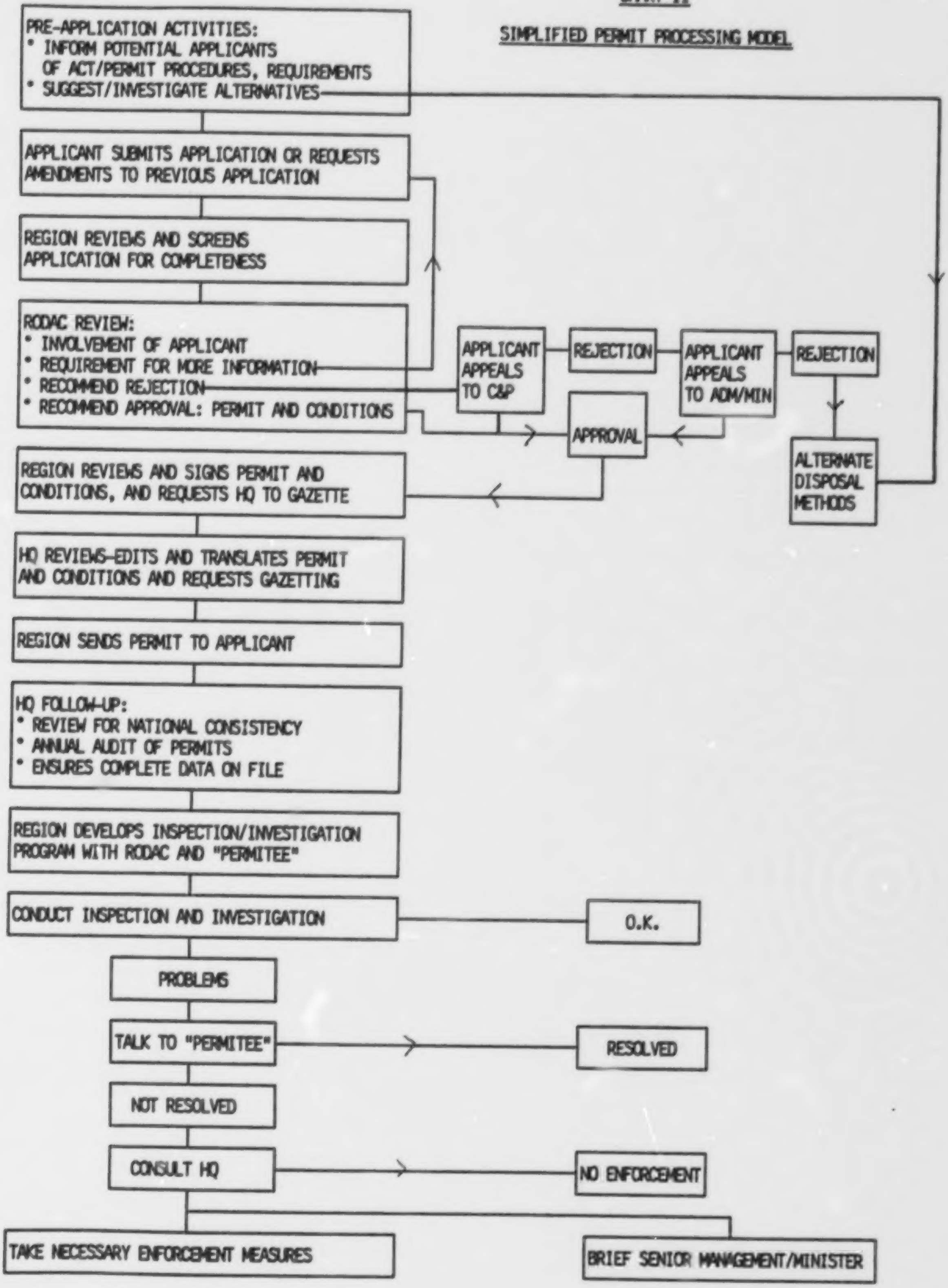
* Fish habitat and the general welfare of fisheries is a responsibility of F&O, rather than of Environment Canada. However, the condition of fish stocks is a reliable indicator of the quality of the marine environment and so of concern to the latter department.

CHART 11

SIMPLIFIED PERMIT PROCESSING MODEL


PRE-APPLICATION ACTIVITIES:
• INFORM POTENTIAL APPLICANTS OF ACT/PERMIT PROCEDURES, REQUIREMENTS
• SUGGEST/INVESTIGATE ALTERNATIVES
APPLICANT SUBMITS APPLICATION OR REQUESTS AMENDMENTS TO PREVIOUS APPLICATION
REGION REVIEWS AND SCREENS APPLICATION FOR COMPLETENESS
RODAC REVIEW:
• INVOLVEMENT OF APPLICANT
• REQUIREMENT FOR MORE INFORMATION
• RECOMMEND REJECTION
• RECOMMEND APPROVAL: PERMIT AND CONDITIONS
APPLICANT APPEALS TO C&P
REJECTION
APPLICANT APPEALS TO ADM/MIN
REJECTION
APPROVAL
ALTERNATE DISPOSAL METHODS
REGION REVIEWS AND SIGNS PERMIT AND CONDITIONS, AND REQUESTS HQ TO GAZETTE
HQ REVIEWS-EDITS AND TRANSLATES PERMIT AND CONDITIONS AND REQUESTS GAZETTING
REGION SENDS PERMIT TO APPLICANT
HQ FOLLOW-UP:
• REVIEW FOR NATIONAL CONSISTENCY
• ANNUAL AUDIT OF PERMITS
• ENSURES COMPLETE DATA ON FILE
REGION DEVELOPS INSPECTION/INVESTIGATION PROGRAM WITH RODAC AND "PERMITEE"
CONDUCT INSPECTION AND INVESTIGATION
O.K.
PROBLEMS
TALK TO "PERMITEE"
RESOLVED
NOT RESOLVED
CONSULT HQ
NO ENFORCEMENT
TAKE NECESSARY ENFORCEMENT MEASURES
BRIEF SENIOR MANAGEMENT/MINISTER

"user pay" principles; approximately 90 percent of all laboratory analyses relevant to ocean dumping permits are done by commercial laboratories at the request and expense of the proponents, but under the direction of the permit issuing office. The remaining 10 per cent of permit laboratory analysis work is done for quality assurance/quality control checks and compliance monitoring by government laboratories.

However, some research and monitoring is necessary (e.g. on the effects of dredged material disposal, and dumpsite assessments) which cannot fairly be charged to individual proponents. In these cases, ODCARF resources are used to finance the necessary investigations in government or private laboratories. This amounts to an estimated 85 per cent of government funded ocean dumping research. The remaining 15 per cent of government financed work is directed at basic scientific information with respect to transport, fate and effects of material dumped at sea. The government's March 1987 "Decision Framework for Science and Technology" would appear to sanction federal support for most, if not all, of the work currently funded.

There are approximately 170 ocean dumpsites in Canada including six major ones. In 1985 only six minor sites were monitored systematically. About 20,000,000 tonnes of dredged material is dumped annually.

ODMP managers are also engaged in special studies with commercial laboratories. Two years ago a review of the interim guidelines for sampling and analysis was initiated to provide guidance for monitoring and dumpsite assessments. The results of the study should be released this year.

4.1.5.2 Regulatee Compliance

ODMP assumes that there is close to 100 per cent regulatee compliance with the provisions of ODCA.

In addition to the resource-limited Environment Canada effort, this is monitored by officers of F&O, the Canadian Coast Guard, the RCMP, and Ports Canada, in the course of their normal duties which (with the exception of F&O) have little to do with ocean dumping. One hundred per cent compliance means that no violations are reported and that there is no evidence of illegal dumping.

There may, indeed, be 100 per cent compliance, but the evaluation team was not satisfied that there was an adequate basis for making such an assumption.

Inspection and monitoring are, of course, expensive activities, although such technologies as Canadian Coast Guard radar enables ODMP officers to monitor a lot of marine activity economically.

4.1.5.3 Cost-Recovery

If all proponents paid for their permits, cost recovery could be implemented with an average fee of $6,000 per permit, versus the $50 to $1,000 scale specified in Paragraph 8 of the Ocean Dumping Control Regulations.

However, the 60 to 70 per cent of permit applications that come from federal departments are handled gratis. While inter-departmental journal-vouchering might have some benefits, it would result in more work for public servants without shifting the burden of the program from taxpayers to specific beneficiaries--the objective of cost recovery.

Certainly, full cost-recovery would have the effect of discouraging compliance, perhaps to such an extent as to compromise the program as far as the many small-scale applicants are concerned. However, a greater degree of cost recovery might be achieved, with fee scales maintained at a level as close as possible to full cost-recovery as is compatible with a high degree of compliance.

4.1.5.4 Self-Regulation and Privatization

The wide variety of possible "dumpers" and the absence of any homogeneous industry group, means that self-regulation would amount to no regulation, and would not be compatible with Canada's adherence to the LDC.

Laboratory analysis is already largely privatized. Ninety per cent of waste characterization is paid for by proponents in accordance with the "polluter pays" principle.

4.1.6 Alternatives

Some popular literature on the marine environment* might lead us to believe that the best alternative to regulating ocean dumping is outright prohibition. However, an examination of the list of materials for which the ODMP has issued dumping permits does not support this extreme approach. Chart 12 summarizes permit data for 1985.

The spectrum of options to regulation may be displayed as follows:

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* Simon, 1985.

CHART 12 - SUMMARY OF PERMIT DATA FOR 1985

TYPE OF WASTE	NUMBER OF PERMITS	QUANTITY			
		ATLANTIC	PACIFIC & YUKON	QUEBEC	NORTHERN & WESTERN
DREDGED MATERIAL	123	2.86×10^6 tonnes	2.99×10^6 tonnes	1.30×10^5 tonnes	1.95×10^5 tonnes
VESSELS	13	4 921.9 tonnes	4 260 tonnes		
INCINERATION AT SEA					
Ship galley refuse	1		1 000 tonnes		
RADIOACTIVE MATERIAL					
Experiments (tracers)	1				25mCi ^{14}C 5mCi ^{3}H
INDUSTRIAL WASTE					
Brine solution	2	60 450 tonnes			
Scrap metal	2				105 tonnes
Fish offal	12	45 735 tonnes			
Concrete caissons	1		20 000 tonnes		
Firearms and prohibited weapons	1	500 pieces			
Oil spill experiments	3	0.77 tonnes	1.46 tonnes		17.63 tonnes
AFA-6*	2				1.4 tonnes

* AFA-6 is a non-ionic surfactant used to accelerate the freezing of sea water.

(i)	prohibit dumping	- overreaction - dredge spoil would be a major problem because it cannot be disposed of economically and environmentally-defensibly elsewhere (see Chart 13);
(ii)	abandon control	- contrary to departmental policy - possible irreparable damage - high socio-economic costs - negative impact on Canada's international image;
(iii)	status quo	- new Canadian Environmental Protection Act will cover ocean dumping - Crown Zellerbach case is before the Supreme Court of Canada, and the resulting decision may have great impact on ocean dumping;
(iv)	make control a provincial responsibility	- impossible because there is a need for consistency with international standards - difficult to determine which provinces should attend conferences and whose scientists would undertake and present research, etc. - of provinces assuming responsibility only two might be expected to have resources to commit to the program

- provinces usually rely on the federal government for resources and advice in this field anyhow
- the situation of the Territories would not be addressed;

(v) trade associations (privatization)

- previously considered and not recommended;

(vi) transfer responsibility to other government departments

- would not be consistent with CEPA
- would limit Environment Canada's capability to implement Environmental Quality Policy;

(vii) consolidation of marine legislation and its administration

- inconsistent with CEPA
- would be disruptive of new Conservation and Protection organization

(viii) improvement of administration

- coordination and integration
- increased cost-recovery practices
- research, monitoring
- better coordination and rationalization should reduce costs.

The public sees enforcement of environmental protection legislation as being largely a federal responsibility. Public opinion studies on environmental protection show a demand for stiffer legislation and regulation, and a tough, effective enforcement and compliance policy with adequate resources. The public appears willing to pay a reasonable price for health, safety and the security of the environment*. Surveys show consistently that Canadians place environmental issues ahead of the resolution of economic and free trade issues.

The ODMP approach whereby ocean dumping is permitted if wastes that cannot be avoided, recycled or reused can be safely disposed of at sea, offers a rational mechanism for waste management. It is the best way for the federal government to deal with the problem without complete prohibition. Industry and environmentalist groups alike agree on such an approach.

4.1.7 Burden of the Program

As noted by the MTF, regulatees, particularly in the Arctic, viewed the combined effect of ODMP and other regulatory programs as burdensome. However, analysis shows that ODMP is not a major offender and if the programs were better coordinated, it appears unlikely that anyone would challenge the need for the ODCA. There is, in fact, some evidence that industry's view of ODMP is becoming more favorable.

The philosophy which underlies ODMP is that of seeking the least expensive environmentally acceptable solution, regardless of whether the ultimate fate of the disposed material is in the ocean or on land.

Judging from the response from proponents and other interested parties, including the environmental non-government organizations, it appears that the ODMP managers have made a useful contribution to rational decision-making on waste disposal in Canada using ocean dumping when appropriate, and suggesting other approaches when not.

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* Evaluation Branch, Environment Canada, "Public Expectations of the Minister of the Environment and Environment Canada"; Draft working paper, April 1987, and sources reported therein.

Ocean dumping control is not likely to have a disproportionate effect on any activity of small business.

4.2 Research and Monitoring

ODCARF was established when the ODCA was passed in 1975. The program financed by this fund provides information related to problems associated with permit issue, supports the development, modification or appraisal of dumping policies, and investigates the possible long-term effects of ocean dumping.

Over the past decade ODCARF has financed projects valued at about $1.5 million. The program, originally funded at the level of $190,000 is now set at $150,000 as a result of government-wide cost cutting.

Environmental monitoring and dumpsite assessments are conducted by Environment Canada's regional offices and F&O officers also have responsibilities to evaluate the effectiveness of permit issue, to research phenomena related to ocean dumping control, and to collect information to assist in the selection or use of dumpsites. Most subsequent dumpsite assessment activities are also funded from ODCARF, although this was not the original intent of the research program.

As a contracting party to the LDC, Canada is committed to the reporting of monitoring activities carried out in accordance with Article VI (1) (d) of the LDC, on monitored areas, on discharged wastes (technical and hydrographical data), on the method of dumping, and on laboratories and organizations responsible for analysing and sampling. To date Canada has provided minimal reporting of dumpsite monitoring activities, because of resource shortages.

Annual consultative and scientific meetings have taken place since 1975. Environment Canada, External Affairs and F&O participate jointly in LDC discussions. Environment Canada heads the Canadian delegation to meetings of the Consultative and the Scientific Group of Experts on Dumping.

There are two components to this issue--the interface between Environment Canada and F&O on ocean dumping research, and Canada's international commitments to marine scientific research.

4.2.1 Environment Canada and F&O Interface on Research

When Environment Canada and F&O were separated in April 1979, the departments agreed on the responsibilities of each department to ensure that Canada's continuing domestic application of the ODCA and related international activities and obligations were effectively discharged. Environment Canada was given the major role of administering Section 33 of the Fisheries Act, and F&O the responsibility for scientific research support.

While Environment Canada, as the regulatory agency, assembles a recommended list of R&D needs based on priorities identified by RODACs, the departments decide jointly on the annual funding allocation.

F&O is represented on all RODACs and Program Managers' Committee and is, therefore, directly involved in permit issue and monitoring of ocean dumping. A number of F&O officers are also designated as inspectors under the ODCA and may be called upon for assistance in dumpsite monitoring. It is important to note that dumpsite assessments are dependent on F&O vessel support.

During the 1975 to 1985 period, most ODCARF projects generated results in the areas of physical and chemical effects of dredged spoil disposal, recommended techniques for hazard assessments, and assessed the quality of the environment at dumpsites.

Some of these research projects indicate that the physical effects of disposal of dredged material, for instance, appear to be local and short-term in nature. Dumpsite monitoring indicates that the ODCA controls effectively limit dumping operations to locations where adverse effects on marine environmental quality are minimized. However, in assessing these findings and the progress made in relation to research goals and priorities, ODMP managers recognize major areas in need of improvement, clarification, understanding, and updating:

- the physical effects of dredging are known generically but site-specific information is still lacking;

- the remobilization and bio-availability of toxics from dredged sediment is only partially understood and the resulting bio-accumulation and its toxicological consequences are not well documented;

- few monitoring studies are undertaken and the effectiveness of care measures (i.e. capping, dilution vs containment) has not been demonstrated. Cumulative impacts of recurring use of one dumpsite for dumping of contaminated or uncontaminated sediments are not well understood;

- predictive tools and guidelines are either lacking or in need of standardization. Some studies have also pointed the need for quality assurance in chemical analysis.

Over the past five-year period, the level of Canadian research in ocean dumping has remained practically unchanged despite the increased complexity and growing numbers of chemicals of concern.

There are serious concerns amongst ODMP managers with regard to the low level of funding presently available for research and monitoring activities. In 1981 and again in 1983, ODMP managers submitted formal requests for control and increase of research funds, but ODCARF remained at the same level and is still under the administrative control of F&O.

Because the amount of funds devoted to ODCARF is small, the number of biological tests or field verification to establish toxicity databases, for example, is limited or non-existent. RODAC's are in no position to rectify this situation with the funds presently available to them and must rely on external sources such as the U.S. Environmental Protection Agency (EPA).

ODMP managers also express some concerns at F&O strategy for achieving a "balance of science and management" in F&O's new fish habitat policy announced in November 1986.

How F&O will achieve its goals is not clear to the ODMP managers, but F&O is still working on the development of its fish habitat policy. The exact role and interaction of the ADM Science with the regions, for example, has still to be defined. ODMP managers have concerns over the continued participation of F&O on RODAC's.

4.2.2 International Research Commitments

Internationally, Canada has promoted the preservation and enhancement of the marine environment through international organizations such as the United Nations, through international conventions such as the LDC, and through non-government organizations, bilateral agreements with neighboring states, and international research projects.

Specific developments with research implications, summarized by ODMP, include the 1982 United Nations Convention on the Law of the Sea (UNCLOS) which represents the culmination of major international efforts to balance matters relating to sovereignty, fisheries, seabed resources and pollution prevention. Part XII of UNCLOS -- to which Canada made a major contribution -- provides a framework for the Protection and Preservation of the Marine Environment.

Part XIII of UNCLOS is dedicated to marine scientific research particularly with respect to pollution of the marine environment. Its primary objective is the establishment of "appropriate scientific criteria for the formulation and elaboration of rules, standards and recommended practices and procedures for the prevention, reduction and control of pollution of the marine environment". Numerous organizations are working towards meeting these objectives:

- Joint Group of Experts on the Scientific Aspects of Marine Pollution (GESAMP)

- Intergovernment Oceanographic Commission

- International Council of Scientific Unions
- International Council for the Exploration of the Sea
- International Arctic Committee
- Arctic Ocean Sciences Board
- World Meteorological Organization

As a member of the Organization for Economic Cooperation and Development (OECD), Canada is committed to contribute data and information to the OECD Environmental Data Compendium and the associated OECD State of the Environment Report. The OECD Environment Committee is particularly concerned with the question of waste management and with transboundary movements of dangerous wastes.

The Montreal Guidelines for the Protection of the Marine Environment Against Pollution from Land-Based Sources (UNEP Working Group of Experts, April, 1985), recommendation on scientific and technical co-operation between states is summarized as follows:

> "...states should co-operate, directly and/or through competent international organizations, in the fields of science and technology related to pollution from land-based sources, and exchange data and other scientific information for the purpose of preventing, reducing and controlling such pollution, taking into account national regulations regarding the protection of confidential information. They should, in particular, undertake to develop and

> co-ordinate to the fullest possible extent their national research programmes and to co-operate in the establishment and implementation of regional and other international research programmes."

Since December 1986, the coordination of Environment Canada's MEQ activities has been carried in a manner consistent with the Environmental Quality Framework approved by Cabinet. This issue will be further discussed in Section 4.4 below.

And Cabinet has also approved F&O's Oceans Strategy for Canada including reference to a multi-year Marine Science Plan to be integrated into MOSST's new strategy paper on Science and Technology in Canada (entitled InnovAction) announced by the Minister of State for Science and Technology on 24 March 1987.

4.3 Constitutional Mandate

Major legislative initiatives currently underway in five federal departments will influence the role and responsibilities of ODMP:

- Environment Canada's proposed roll-over of the ODCA into CEPA;
- Environment Canada's proposal to legislate the EARP system;
- Environment Canada's review of the MTF's recommendation on "offshore";
- F&O's proposed Oceans Strategy for Canada;
- F&O's upcoming policy on federal Arctic resource responsibilities;
- EMR's proposed Canada Oil and Gas Operations Act;
- EMR's proposed Memorandum to Cabinet on "offshore";

- INAC's proposed Memorandum to Cabinet on "offshore" north of 60°.

On the provincial front, British Columbia courts have ruled that the ODCA is not valid legislation within B.C.'s "inland" marine waters. The case arises from an incident in Beaver Cove, B.C. in August 1980. The subsequent chronology is as follows:

- 28 February 1981: charges were sworn against Crown Zellerbach Canada Limited for non compliance with conditions of an ODCA permit -- logging debris were dumped at a location other than that specified in the permit.

- 28 May 1982: a B.C. Provincial Court found section 4(1) of the ODCA "ultra vires" the Canadian Parliament. The charges were dismissed.

- 26 January 1984: a Crown appeal was dismissed by the B.C. Court of Appeal.

- 4 May 1984: the Supreme Court of Canada granted leave to appeal the B.C. Court of Appeal judgement.

- July 1986: The Supreme Court heard the appeal.

- 24 March 1988: the Supreme Court ruled 4:3 in favor of the federal government. Mr. Justice Gerald Le Dain wrote: "Marine pollution, because of its predominantly extra-provincial as well as international character and implications, is clearly a matter of concern to Canada as a whole."

Until the Supreme Court handed down this ruling, no regulations, federal or provincial, specifically covered dumping in B.C. waters. Outside British Columbia, the ODCA was administered on a business-as-usual basis--within provincial waters up to the high-water mark.

In British Columbia the ODCA has been administered under the authority of Section 33 of the Fisheries Act. The proponents were told by ODMP managers:

> "Many of the requirements of the ODCA relate to the protection of fish, fish habitat and man's use of fish. We will continue to administer our ocean dumping control program under the authority of the Fisheries Act (Section 33) to the extent that dumping may affect the fisheries.
>
> We therefore request that prior to dumping you provide us with information on any ocean dumping (into any marine waters) that you propose to undertake within the next one year that could, in any way, affect fish. For your convenience, you may provide this information on the regular forms that we use under the ODCA and Regulations. We will review your ocean dumping proposal and provide our comments well in advance of the proposed dumping. This request is made pursuant to subsection 33.1 (1) of the Fisheries Act."

While this approach was not wholly satisfactory, it did allow intending dumpers to determine in advance whether a proposed course of action would be likely to result in charges under Section 33 of the Fisheries Act.

In their 1982 and 1984 judgements, the B.C. courts had identified several supposed deficiencies in the wording of the ODCA:

- the ODCA was passed in implementation of a convention obligation but there was no express statement to this effect in the act;
- the ODCA mentions the Fisheries, Navigation, Health and Shipping constitutional heads, but the linkages to actual or potential harm were weakly stated in the act; and
- the ODCA defines marine waters in ambiguous terms and does not adequately reflect the federal and provincial jurisdiction in coastal waters.

In fact, the Supreme Court ruled that the federal authority was based on the constitutional heads of Peace, Order and Good Government.

Environment Canada's concern with the B.C. courts' decision was that ocean dumping in inland marine waters is a matter of national and international importance in preventing marine pollution, and that the ODCA permit system provided the most appropriate mechanism for controlling ocean dumping in Canadian marine waters.

While dumping in tidal waters may be within a province and therefore within its legislative jurisdiction, material dumped in tidal waters may enter federal waters and any such dumping was, therefore, also alleged to be a matter for federal jurisdiction. The dumping cannot be regarded as merely a local or private matter.

The key stakeholders in the ODCA constitutional challenge and their positions were as follows*:

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* ODMP Status report on the ODCA constitutional challenge, 14 January 1986.

- Environment Canada, which wanted to continue to use the ODCA permit system to control ocean dumping in all Canadian marine waters in discharge of its environmental protection mandate and to contribute to management of hazardous waste.

- Fisheries & Oceans, preferred to use approvals under the Fisheries Act to control ocean dumping in "internal" Canadian marine waters and to limit scope of the ODCA to external waters covered by the LDC.

- The provinces wanted to maintain provincial control over "inland" waters, but to rely on the federal government for the technical assessment and monitoring of ocean dumping activities.

Environment Canada has included ODCA provisions in the proposed CEPA legislation.

4.4 Marine Environmental Quality (MEQ)

ODMP, and the ODCA per se, are limiting pollution of the global marine environment only to a small extent.

Environment Canada has unique responsibility for managing hazardous wastes and has shared responsibilities for pollution-prevention, reduction and control, and wildlife conservation, and all these activities affect the seas.

C&P has a major role in protecting the quality of the marine environment in ocean dumping control, in its review of coastal construction, in both near-shore and offshore environmental impact assessments, in the management of shellfish growing areas, in the preparation for and response to environmental emergencies, in control of water and air pollution from point and non-point sources, and in the study, assessment, control and monitoring of toxic chemicals. C&P is also responsible for seabird and migratory bird conservation and research.

Environment Canada's other programs involving marine environmental quality include weather and ice forecasting, the management of marine parks and coastal land-use monitoring.

Chart 10 shows the resources allocated to these activities.

Internationally, Canada promotes the preservation and enhancement of the quality of the marine environment through the United Nations Environment Program, the London Dumping Convention, the Law of the Sea Conference, the World Conservation Strategy.

Internationally, Canada is in substantial compliance with the institutional and legislative requirements of the 1982 UNCLOS, and is signatory to or participates in various international agreements including:

Land-based pollution -	- Montreal Guidelines for the Protection of the Marine Environment against Pollution from Land-Based Sources (UNEP)

Pollution by dumping at sea -	- London Dumping Convention
Other vessel-generated pollution -	- International Convention for the Prevention of Pollution from Ships - International Convention for the Prevention of Pollution of the Sea by Oil - International Convention on Civil Liability for Oil Pollution Damage
Pollution from sea-bed activities -	- Sea-Bed Working Group of UNCLOS
Pollution from or through the atmosphere -	- Convention on Long-Range Transboundary Air Pollution - Convention on the Protection of the Ozone Layer

Environment Canada's Environment Management Committee (EMC) has now endorsed C&P's management framework for MEQ, and this has also been favorably received by F&O. Pilot work is underway in the Atlantic Region. It is reasonable to expect that these developments will open the way for optimal coordination and mutual reinforcement of these activities.

Existing water pollution regulations in Canada are variously applied by product, substance, activity facility, equipment and methods. This results in varying degrees of environmental protection, but there are few specific standards for marine contaminants. Those that are there are often inconsistent, due to the fact that they have been set by a variety of agencies.

The MEQ issue first was recognized by Environment Canada senior management in 1982 and has received considerable attention since then*. In 1985, the ADM of the then Environmental Protection Service (EPS) designated MEQ as an on-going operational priority and assigned the national lead to EPS Atlantic. A working group was established. It now has 12 C&P members and is currently increasing its representation from the Canadian Wildlife and the Inland Waters and Lands Directorates. The Head of the ODMP is the primary advisor at headquarters, and is the co-chairman of the Protection Working Group. The group's role is to coordinate Environment Canada's national and international programs and responsibilities in marine environmental protection and conservation. Its current activities include production of:

- an MEQ status and priorities report, to be part of the updated State of the Environment Report;

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* Senior Management Committee Submission (1982)
Draft Policy Document (1984)
Action Plan, Atlantic Region (1984)
Draft MEQ Action plan and 1986/87 fiscal priorities (1986)
Draft MEQ Framework (February 1987)

- an MEQ Framework for Environment Canada, following Cabinet approval of December 1986 (draft was presented February '87);
- an MEQ Action Plan for C&P;
- an MEQ Conference on Strategic Considerations.

The Chairman of the MEQ Working Group is of the opinion that C&P should have a distinct marine program component to focus on in order to meet its responsibilities for MEQ, although this would disrupt C&P's newly-established organizational structure.*

Fragmentation of efforts through many issues and programs, overlapping jurisdictions, unclear or unresolved mandates, a predominantly freshwater approach to our aquatic pollution concerns and responsibilities, too little knowledge of the relevant marine issues, and a shortage of in-house professionals in marine environmental management, has led to a situation in which Environment Canada has less than full control over the MEQ issue in the past. There is reason to hope however that recent developments will resolve the problem to the extent possible given limitations on the department's mandate.

A marine component to our environmental quality responsibilities may: (a) bring a clearer focus to MEQ issues by coordinating or integrating existing marine programs and activities; and (b) promote the MEQ concept within the framework of departmental policy.

4.5 The Plastics Problem

As noted in Section 4.1.1, there is considerable scientific and public concern over the cumulative impact of persistent plastics and other persistent synthetic material in the environment.

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* Status report on MEQ issue, October 1985.

The problem is difficult to deal with through the use of such instruments as LDC and the various national acts that express the Convention's concerns, because plastics come from so wide a variety of sources. If we are talking about disposal of a barge-load of garbage, ODCA can certainly be invoked, but beach littering and the illegal but uncontrollable jettisoning of innumerable relatively small quantities of plastic six-pack rings, polythene bags, damaged polypropylene fishing tackle or rigging from naval, recreational or commercial shipping--and most particularly commercial fishing boats, does not lend itself to solution by regulatory means*.

Recognizing this, Environment Canada and F&O have identified a non-regulatory approach that can be taken--the fostering public awareness of the problem and of its implications.

F&O has assumed the lead role and has established a task force on which ODMP is represented. F&O has identified the problem as a priority under its Oceans Strategy and intends to spend $300,000 in 1988-89 on tackling the issue. Responsibilities have tentatively been allocated as follows:

- Fishing industry; F&O;
- Shipping; Transport Canada;
- Plastics from non point sources (litter) and plastic products; Environment Canada.

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* The ODCA, of course, prohibits the dumping of persistent plastic materials in areas of Canadian jurisdiction. However, neither this nor any other existing legislation covers the high seas, and even our own prohibition is to a large extent unenforceable given the varied nature of pollution by plastics.

F&O is now developing a plan of action and seeking agreement from other parties involved.

Canada has not yet ratified Annex V of MARPOL 73/78, but is adhering on a voluntary basis to the provision of that Convention which contains international regulations for the Prevention of Pollution by Garbage from Ships and which prohibits disposal of all plastic material at sea.

Transport Canada is developing amendments to the Canada Shipping Act to deal with such matters as disposal of persistent plastics from ships, and the Canadian government is aware through its participation in the North Pacific Fur Seal Commission of the problems of entanglement of fur seals in plastic bands and nets. Posters have been sent out to fishermen alerting them to the specific danger to these mammals from discarded fishing nets.

F&O is also planning to send out notice to all licensed fishermen in an effort to make the fishing industry more aware of the problems caused to fish and marine mammals by abandoned or discarded fishing gear and other plastic debris. Fishermen will be asked to bring back to port, for disposal on land, all persistent plastic materials, including worn-out and damaged fishing nets or lines.

The Marine Sciences Research Centre at Stony Brook on Long Island, N.Y., estimates that 30 per cent of the fish in the world's oceans have small pieces of plastic in their stomachs that interfere with digestion*.

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* Browne, Malcolm W. "Would Threat of Plastic Trash Defies Technological Solution", New York Times, 6 September 1987.

SECTION 5 - CONCLUSIONS

It is no exaggeration to say that the future of mankind depends on the ability of nations to work cooperatively to protect the human environment against the problems that a rapidly expanding world population, living for the most part in industrial or industrializing societies, can inflict. The London Dumping Convention and national legislation and supporting programs, such as ODMP, that flow from the LDC, represent the most important breakthrough in this direction that we have achieved.

Despite its modest scale, ODMP is one of the success stories in Canada's environmental protection efforts on the global level where the really critical battle will be won or lost.

This is not to say that the program is perfect. To some extent it is lost within C&P, being organizationally detached from the department's many other marine programs and concerns. Work on a coordinated approach to Marine Environmental Quality is, however, advancing and should solve this particular problem.

The Nielsen Report on Regulatory Programs documented a special problem in the Arctic, saying that significantly better interdepartmental coordination was essential to reduce the regulatory burden on industry. Improvements have been made in the areas of interdepartmental coordination and liaison to respond to this criticism, backed by specific Memoranda of Understanding.

Full cost recovery would greatly raise the cost of permit application and distort the national waste disposal system by providing an additional incentive to dump on land. The existing system is geared to ensuring that dumping takes place in accordance with scientific dictates--always having regard for economic factors, such as the present location of the material to be disposed of. If a permit cost $6,000, the possibility of controlled use of the oceans as a dumping option might be eliminated, or there would be a strong incentive to illegal dumping. Given the very limited resources available for policing ocean dumping, this could be a serious matter.

A greater degree of cost recovery from proponents might, however, be introduced. But Public Works Canada applications for permits to dump dredge spoil account for about two-thirds of ODCA activity. Cost-recovery from federal proponents would not result in any shifting of the cost of the program from taxpayers to specific beneficiaries, but would mean additional bureaucratic activity in journal-vouchering.

Program managers would like to retain fee revenues through some such mechanism as a revolving fund. While the evaluation team recognizes that the question of research funding, in particular, needs careful study, a revolving fund approach is not recommended, being contrary to the provisions of the Financial Administration Act and tending to reduce the constitutional control that Parliament has over the allocation of revenues.

Research funds are provided through ODCARF from the F&O A-base. This is not an ideal arrangement. There is also considerable concern that recent changes in F&O will significantly reduce the amount of internal research capability, although F&O says this will not be the case. While the intent must clearly be to privatize this function, it is essential that the federal government retain some audit and compliance monitoring capability. Use of laboratories in Eastern Canada for regular analysis of samples from the West has been unsuccessful in other government programs. Given the critical importance of research to the integrity of the ODMP, the situation requires further study in the context of the March 1987 "Decision Framework for Science and Technology".

Nor do we know as much as we should about the adequacy of inspection and monitoring activities. The only recent prosecution under ODCA was the result of a "confession" by Gulf Canada. If a company employee hadn't told the department what was happening we might never have known about it.

And only 40 of 170 dumpsites have been monitored. This may be adequate, or it may be all that the department can afford to do. Senior Management needs to know which.

Despite limited resources and mandate and interdepartmental coordination problems, ODMP was found to be a sound and well-managed response to a major international problem and to Canada's commitments under the LDC.

The Supreme Court decision on the Crown Zellerbach case, however, resolved the Ocean Dumping and Marine Program's most serious mandate problem.

Managers express concern over resources and question whether existing levels are adequate to maintain Canada's good image as an environmentally responsible nation, or even to operate cost-effectively. Related to the latter consideration is a sense that difficulty in maintaining state-of-the-art approaches results in ineffectiveness. Because ODMP managers have limited knowledge, and limited research and monitoring capability, they are forced to make conservative decisions. In some marginal cases they say that they refuse permits simply because they have no means of knowing that the proposed dumping is safe, although it may well be. This bothers managers, but the problem must be seen in the context of an approval rate of 90 per cent for permit applications.

Environment Canada Environnement Canada

OCEAN DUMPING CONTROL ACT

LOI SUR L'IMMERSION DE DÉCHETS EN MER

Statutes of Canada 1974-75 c. 55

Statuts du Canada 1974-75 chap 55

Amendment List September 5, 1975

Liste de modifications 5 septembre 1975

CHAPTER 55

An Act to provide for the control of dumping of waste and other substances in the ocean

[*Assented to 19th June, 1975*]

Her Majesty, by and with the advice and consent of the Senate and House of Commons of Canada, enacts as follows:

SHORT TITLE

Short title

1. This Act may be cited as the *Ocean Dumping Control Act*.

INTERPRETATION

Definitions

2. (1) In this Act,

"aircraft" *«aéronef»*

"aircraft" means any machine used or designed for navigation of the air but does not include a machine designed to derive support in the atmosphere from reactions against the earth's surface of air expelled from the machine;

"analyst" *«analyste»*

"analyst" means a person designated as an analyst pursuant to subsection 20(1);

"application" *«demande»*

"application" means an application for a permit;

"Canadian aircraft" *«aéronef canadien»*

"Canadian aircraft" means an aircraft registered pursuant to any Act of Parliament;

"Canadian ship" *«navire canadien»*

"Canadian ship" means a ship registered pursuant to any Act of Parliament;

CHAPITRE 55

Loi régissant l'immersion en mer de déchets et substances diverses

[*Sanctionnée le 19 juin 1975*]

Sa Majesté, sur l'avis et du consentement du Sénat et de la Chambre des communes du Canada, décrète:

TITRE ABRÉGÉ

Titre abrégé

1. La présente loi peut être citée sous le titre: *Loi sur l'immersion de déchets en mer.*

INTERPRÉTATION

Définitions

2. (1) Dans la présente loi,

«aéronef» *"aircraft"*

«aéronef» désigne tout appareil utilisé ou conçu pour la navigation aérienne, à l'exclusion des appareils conçus pour se maintenir dans l'atmosphère grâce à la réaction, sur la surface de la terre, de l'air qu'ils expulsent;

«aéronef canadien» *"Canadian aircraft"*

«aéronef canadien» désigne un aéronef immatriculé en conformité d'une loi du Parlement;

«analyste» *"analyst"*

«analyste» désigne la personne nommée à ce titre en vertu du paragraphe 20(1);

«capitaine» *"master"*

«capitaine» comprend toute personne ayant le commandement ou la responsabilité d'un navire, à l'exclusion du pilote;

«Convention» *"Convention"*

«Convention» désigne la *Convention sur la prévention de la pollution des mers résultant de l'immersion de déchets* signée par le Canada le 29 décembre 1972;

"contracting party" *«partie contractante»*

"contracting party" means a state that is a contracting party to the Convention;

"Convention" *«Convention»*

"Convention" means the *Convention on the Prevention of Marine Pollution by Dumping of Wastes and other Matter* signed by Canada on December 29, 1972;

"dumping" *«immersion»*

"dumping" means any deliberate disposal from ships, aircraft, platforms or other man-made structures at sea of any substance but does not include

(*a*) any disposal that is incidental to or derived from the normal operations of a ship or an aircraft or of any equipment thereof other than the disposal of substances from a ship or aircraft operated for the purpose of disposing of such substances at sea, and

(*b*) any discharge that is incidental to or derived from the exploration for, exploitation of and associated off-shore processing of sea bed mineral resources;

"inspector" *«inspecteur»*

"inspector" means a person designated as an inspector pursuant to subsection 20(1);

"master" *«capitaine»*

"master" includes every person having command or charge of a ship but does not include a pilot;

"Minister" *«Ministre»*

"Minister" means the Minister of the Environment;

"owner" *«propriétaire»*

"owner", in relation to a ship or an aircraft, means the person having for the time being, either by law or by contract, the possession and use of the ship or aircraft;

"permit" *«permis»*

"permit" means a permit granted under section 9;

"prescribed" *«réglementé»*

"prescribed" means prescribed by regulation;

"ship" *«navire»*

"ship" includes any description of vessel, boat or craft used or capable of being used solely or partly for marine navigation without regard to method or lack of propulsion.

«demande» *"application"*

«demande» désigne une demande de permis;

«immerger» *"dump"*

«immerger» signifie procéder à une opération d'immersion;

«immersion» *"dumping"*

«immersion» désigne tout rejet délibéré de substances à partir de navires, aéronefs, plates-formes ou autres ouvrages placés en mer, à l'exclusion

a) du rejet résultant ou provenant de l'exploitation normale d'un navire ou d'un aéronef ou de leur équipement, sauf cas du rejet de substances à partir d'un navire ou d'un aéronef affecté à cette fin; et

b) du déversement résultant ou provenant de l'exploration, de l'exploitation et du traitement en mer des ressources minérales du fond des mers;

«inspecteur» *"inspector"*

«inspecteur» désigne la personne nommée à ce titre en vertu du paragraphe 20(1);

«Ministre» *"Minister"*

«Ministre» désigne le ministre de l'Environnement;

«navire» *"ship"*

«navire» désigne toute espèce de bâtiment, bateau ou embarcation utilisé ou pouvant être utilisé exclusivement ou partiellement pour la navigation maritime, autopropulsé ou non et quel qu'en soit le mode de propulsion;

«navire canadien» *"Canadian ship"*

«navire canadien» désigne un navire immatriculé en conformité d'une loi du Parlement;

«partie contractante» *"contracting party"*

«partie contractante» désigne un État partie à la Convention;

«permis» *"permit"*

«permis» désigne un permis accordé en vertu de l'article 9;

«propriétaire» *"owner"*

«propriétaire» d'un navire ou d'un aéronef désigne la personne à qui en sont dévolues à un moment donné, par la loi ou par contrat, la possession et l'utilisation;

«réglementé» *"prescribed"*

«réglementé» signifie prescrit ou désigné par règlement.

"The sea" defined

(2) For the purposes of this Act, "the sea" means

(*a*) the territorial sea of Canada;

(*b*) the internal waters of Canada other than inland waters;

(*c*) any fishing zones prescribed pursuant to the *Territorial Sea and Fishing Zones Act*;

(*d*) the arctic waters within the meaning of the *Arctic Waters Pollution Prevention Act*;

(*e*) any area of the sea adjacent to the areas referred to in paragraphs (*a*) to (*d*) as may be prescribed;

(*f*) any area of the sea, under the jurisdiction of a foreign state, other than internal waters; and

(*g*) any area of the sea, other than the internal waters of a foreign state, not included in the areas of the sea referred to in paragraphs (*a*) to (*f*).

"Inland waters" defined

(3) For the purposes of paragraph (2)(*b*), "inland waters" means all the rivers, lakes and other fresh waters in Canada and includes the St. Lawrence River as far seaward as the straight lines drawn

(*a*) from Cap des Rosiers to the westernmost point of Anticosti Island; and

(*b*) from Anticosti Island to the north shore of the St. Lawrence River along the meridian of longitude sixty-three degrees west.

Incineration deemed to be dumping

(4) For the purposes of this Act, the deliberate disposal from ships, aircraft, platforms or other man-made structures at sea of any substance by incineration or other means of thermal degradation is deemed to be dumping.

APPLICATION

Binding on Her Majesty

3. This Act is binding on Her Majesty in right of Canada or a province and any agent thereof.

PROHIBITIONS

Dumping

4. (1) No person shall dump except in accordance with the terms and conditions of a permit.

Définition de «mer»

(2) Pour l'application de la présente loi, «mer» désigne

a) la mer territoriale du Canada;

b) les eaux intérieures du Canada, à l'exclusion des eaux internes;

c) les zones de pêche réglementées conformément à la *Loi sur la mer territoriale et les zones de pêche*;

d) les eaux arctiques au sens de la *Loi sur la prévention de la pollution des eaux arctiques*;

e) les zones de mer réglementées, contiguës aux eaux visées aux alinéas *a*) à *d*);

f) les zones de mer relevant de la souveraineté d'un État étranger, à l'exclusion des eaux intérieures; et

g) les zones de mer, à l'exclusion des eaux intérieures d'un État étranger, non comprises dans les eaux visées aux alinéas *a*) à *f*).

Définition des «eaux internes»

(3) Pour l'application de l'alinéa (2)*b*), l'expression «eaux internes» désigne l'ensemble des fleuves, rivières, lacs et autres eaux douces du Canada et comprend la partie du fleuve Saint-Laurent délimitée, vers la mer, par les lignes droites joignant

a) Cap-des-Rosiers à la pointe extrême ouest de l'île d'Anticosti; et

b) l'île d'Anticosti à la rive nord du fleuve Saint-Laurent suivant le méridien de soixante-trois degrés de longitude ouest.

L'incinération assimilée à l'immersion

(4) Aux fins de la présente loi, le rejet délibéré de substances, consécutif à l'incinération ou à l'emploi d'autres moyens de dégradation thermique, à partir de navires, aéronefs, plates-formes ou autres ouvrages placés en mer, est assimilé à une immersion.

APPLICATION

Sa Majesté est liée

3. La présente loi lie Sa Majesté du chef du Canada ou d'une province, ainsi que ses mandataires.

INTERDICTIONS

Immersion

4. (1) Il ne peut être procédé à des immersions qu'en conformité d'un permis.

Application

(2) Subsection (1) applies to dumping

(*a*) from any ship, aircraft, platform or other man-made structure in any area of the sea referred to in paragraphs 2(2)(*a*) to (*e*);

(*b*) from any Canadian ship or Canadian aircraft in any area of the sea other than those referred to in paragraphs 2(2)(*a*) to (*e*) unless the dumping is pursuant to a permit validly granted in accordance with the Convention by a contracting party other than Canada; and

(*c*) from any ship or aircraft other than Canadian ships or Canadian aircraft in any area of the sea other than those referred to in paragraphs 2(2)(*a*) to (*e*) if the substance intended for dumping has been loaded on such ship or aircraft in Canada.

Loading

5. (1) No person shall load on any ship or aircraft in Canada for the purpose of dumping any substance except in accordance with the terms and conditions of a permit.

Idem

(2) No master in charge of a Canadian ship and no pilot in command of a Canadian aircraft shall, while such ship or aircraft is outside Canada, permit the loading on such ship or aircraft for the purpose of dumping any substance unless the loading is pursuant to

(*a*) a permit granted under this Act; or

(*b*) a permit granted in accordance with the Convention by a contracting party in respect of a substance loaded on the ship or aircraft in the territory of such party.

Disposal on ice

6. No person shall dispose of any substance at sea by placing it on ice in any area of the sea referred to in paragraphs 2(2)(*a*) to (*e*) except in accordance with the terms and conditions of a permit.

Disposal of ship or aircraft

7. (1) No person shall dispose of any ship, aircraft, platform or other man-made structure at sea except in accordance with the terms and conditions of a permit.

Application

(2) Le paragraphe (1) s'applique à l'immersion pratiquée à partir

a) de navires, aéronefs, plates-formes ou autres ouvrages dans toute zone de mer visée aux alinéas 2(2)*a*) à *e*);

b) de navires ou aéronefs canadiens dans toute zone de mer non visée aux alinéas 2(2)*a*) à *e*), à moins que cette immersion ne soit conforme à un permis régulièrement délivré par une partie contractante, autre que le Canada, en conformité avec la Convention; et

c) de navires ou aéronefs, à l'exclusion des navires ou aéronefs canadiens, dans toute zone de mer non visée aux alinéas 2(2)*a*) à *e*) si la substance à immerger a été chargée, au Canada, à bord de ces navires ou aéronefs.

Chargement

5. (1) Il est interdit de charger au Canada, aux fins d'immersion, une substance à bord d'un navire ou d'un aéronef sauf en conformité d'un permis.

Idem

(2) Le capitaine d'un navire canadien ou le commandant de bord d'un aéronef canadien ne doit autoriser le chargement, à l'extérieur du Canada, d'une substance, aux fins d'immersion, sur ce navire ou cet aéronef que si le chargement est conforme

a) à un permis délivré en vertu de la présente loi; ou

b) à un permis délivré en conformité de la Convention par une partie contractante pour une substance chargée sur le navire ou l'aéronef dans le territoire de cette partie.

Rejet sur les glaces

6. Il est interdit de rejeter une substance en mer en l'abandonnant sur les glaces des zones de mer visées aux alinéas 2(2)*a*) à *e*), sauf en conformité d'un permis.

Abandon de navire ou d'aéronef

7. (1) Il est interdit d'abandonner en mer un navire, un aéronef, une plate-forme ou tout autre ouvrage sans un permis délivré à cette fin.

Application

(2) Subsection (1) applies to the disposal of

(*a*) any ship, aircraft, platform or other man-made structure in any area of the sea referred to in paragraphs 2(2)(*a*) to (*e*); and

(*b*) any Canadian ship or Canadian aircraft in any area of the sea other than those referred to in paragraphs 2(2)(*a*) to (*e*).

Emergency

8. (1) Notwithstanding subsection 4(1), a person may dump without a permit if the dumping is necessary to avert danger to human life at sea or to any ship or aircraft.

Minimize danger

(2) Any dumping pursuant to subsection (1) shall, as far as possible, be carried out in a manner that will minimize danger to human life and damage to the marine environment.

Negligence no defence

(3) Nothing in this section relieves any person of his liability under this Act if the danger to human life or any ship or aircraft that gave rise to dumping under the authority of subsection (1) was caused by a negligent act or omission of such person.

Duty to report

(4) Where dumping has taken place in circumstances described in subsection (1), the master of the ship or the pilot in command of the aircraft shall forthwith report the dumping to an inspector, or such other person as the Governor in Council may designate, at such location and in such manner as may be prescribed, and the report shall contain such information as may be prescribed.

PERMITS

Minister may grant permit

9. (1) Subject to subsections (4) and (5), the Minister may grant any permit required by this Act upon receipt of an application in prescribed form.

Application

(2) Le paragraphe (1) s'applique à l'abandon

a) de tout navire, aéronef, plate-forme ou autre ouvrage dans les zones de mer visées aux alinéas 2(2)*a*) à *e*); et

b) de navires ou d'aéronefs canadiens dans une zone de mer non visée aux alinéas 2(2)*a*) à *e*).

Cas d'urgence

8. (1) Par dérogation au paragraphe 4(1), il peut être procédé sans permis à toute immersion nécessaire à la sauvegarde de la vie humaine en mer ou à la sécurité de navires ou d'aéronefs.

Limitation des risques

(2) Dans les cas visés au paragraphe (1), il doit, dans la mesure du possible, être procédé à l'immersion de manière à réduire au minimum les risques d'atteinte à la vie humaine et au milieu marin.

La faute supprime l'exemption

(3) Le présent article ne dégage pas de sa responsabilité aux termes de la présente loi une personne qui, par sa négligence, a rendu nécessaire, pour la sauvegarde de la vie humaine ou la sécurité d'un navire ou d'un aéronef, l'immersion autorisée par le paragraphe (1).

Obligation de rendre compte

(4) Lorsque l'immersion a lieu dans les circonstances visées au paragraphe (1), le capitaine du navire ou le commandant à bord de l'aéronef doit, sans délai, en rendre compte à un inspecteur, ou à toute autre personne désignée par le gouverneur en conseil, en donnant dans son rapport, établi au lieu et de la façon prescrits, tous les renseignements prévus par règlement.

PERMIS

Le Ministre peut délivrer un permis

9. (1) Sous réserve des paragraphes (4) et (5), le Ministre peut délivrer le permis qu'exige la présente loi lorsqu'il est saisi d'une demande présentée en la forme réglementaire.

Application

(2) An application shall contain such information as may be prescribed.

Fee

(3) An application shall be accompanied by the prescribed fee.

No dumping permits in certain circumstances

(4) No permit may be granted under this section if the dumping or disposal described in the application is prohibited under any other Act of Parliament or if a licence or permit for such dumping or disposal is required under any such other Act and the licence or permit has not been obtained.

No permit for Schedule I substances except in special circumstances

(5) No permit may be granted in respect of a substance specified in Schedule I unless, in the opinion of the Minister,

(*a*) the substance is rapidly rendered harmless by physical, chemical or biological process of the sea and does not render normally edible marine organisms inedible or unpalatable or endanger human health or the health of animals;

(*b*) with respect to any substance specified in items 1 to 5 of that Schedule, such substance is contained in another substance in a quantity or concentration that does not exceed the maximum quantity or concentration prescribed;

(*c*) the dumping or disposal of a certain quantity of the substance is necessary to avert an emergency that poses an unacceptable risk relating to human health and admits of no other feasible solution; or

(*d*) where the substance is to be transformed by incineration or other means of thermal degradation, any substance that results from such transformation is

(i) a substance specified in Schedule I in respect of which a permit may be granted by virtue of paragraph (*a*) or (*b*), or

(ii) a substance that is not specified in Schedule I.

Notice and consultation

(6) Where, in the opinion of the Minister, the dumping or disposal of a certain quantity of a substance specified in Schedule I is necessary to avert an emergency that poses an unacceptable risk relating

Demande

(2) Toute demande doit comporter les renseignements réglementaires.

Droits

(3) Toute demande doit être accompagnée des droits réglementaires.

Refus du permis d'immersion dans certains cas

(4) Il ne peut être délivré de permis d'immersion en vertu du présent article; si l'immersion, le rejet ou l'abandon envisagé dans la demande est interdit par une autre loi du Parlement du Canada ou si la licence ou le permis à cet effet qu'une telle loi pourrait exiger, n'a pas été obtenu.

Refus du permis, sauf dans certains cas, pour les substances visées à l'annexe I

(5) Il ne peut être délivré de permis pour l'une des substances énumérées à l'annexe I que si, de l'avis du Ministre,

a) cette substance est rapidement rendue inoffensive dans la mer par des processus physiques, chimiques ou biologiques, ne rend pas impropres à la consommation des organismes marins ordinairement comestibles, n'altère pas le goût de ces organismes et ne présente aucun danger pour la santé de l'homme ou celle des animaux;

b) lorsqu'il s'agit d'une substance visée aux paragraphes 1 à 5 de cette annexe, la substance apparaît dans une autre substance en quantité ou concentration ne dépassant pas le maximum réglementaire;

c) l'immersion, le rejet ou l'abandon d'une certaine quantité de cette substance est nécessaire afin d'éviter une situation d'urgence présentant des risques inacceptables pour la santé humaine et n'admet aucune autre solution possible; ou

d) de la transformation de cette substance, par incinération ou autre moyen de dégradation thermique, ne dérivent que des substances

(i) qui figurent à l'annexe I et pour lesquelles les alinéas *a*) ou *b*) autorisent la délivrance d'un permis, ou

(ii) qui ne figurent pas à l'annexe I.

Avis et consultation

(6) Nonobstant l'alinéa (5)*c*), lorsque, de l'avis du Ministre, l'immersion, le rejet ou l'abandon d'une certaine quantité de l'une des substances énumérées à l'annexe I est nécessaire afin d'éviter une situation

to human health and admits of no other feasible solution, notwithstanding paragraph (5)(*c*), no permit may be granted unless

(*a*) notification of the proposed dumping has been given to the organization responsible under the Convention for secretariat duties in relation to the Convention; and

(*b*) consultations have, if practicable, taken place with any foreign state that is likely to be affected by the proposed dumping.

Factors to be considered in granting permit

10. (1) Upon receipt of an application the Minister, in determining whether to grant the permit,

(*a*) shall take into account the factors set out in Schedule III; and

(*b*) may take into account any other factors that he deems necessary.

Terms of permit

(2) A permit shall contain such terms and conditions as the Minister deems necessary in the interests of human life, marine life or any legitimate uses of the sea and, without limiting the generality of the foregoing, may contain terms and conditions relating to such of the following as are applicable:

(*a*) the nature of the substance that may be dumped or disposed of and the quantity thereof;

(*b*) the method and frequency of dumping or disposal authorized including, if necessary, the date or dates on which dumping or disposal is authorized;

(*c*) the manner of loading and stowing the substance authorized to be dumped or disposed of;

(*d*) the site at which dumping or disposal may take place;

(*e*) the route to be followed by the ship or aircraft transporting the substance to the site of the dumping or disposal; and

(*f*) any special precautions to be taken respecting the loading, transporting, dumping or disposal of the substance.

d'urgence présentant des risques inacceptables pour la santé humaine et n'admet aucune autre solution possible, il ne peut être délivré de permis qu'après

a) notification de l'immersion projetée à l'organisation chargée, aux termes de la Convention, des fonctions de secrétariat relatives à celle-ci; et

b) dans la mesure du possible, consultation des États étrangers qui sont susceptibles de subir les effets de l'immersion projetée.

Facteurs à prendre en considération pour délivrer un permis

10. (1) Le Ministre, saisi d'une demande, tient compte, pour décider de la délivrance du permis,

a) des facteurs énumérés à l'annexe III; et,

b) de tout autre facteur en jeu à son appréciation.

Contenu d'un permis

(2) Un permis doit comporter les conditions que le Ministre juge nécessaires à la protection de la vie humaine, du milieu biologique marin ou de toute utilisation légitime de la mer et, notamment, stipuler celles des conditions suivantes qui sont applicables:

a) la nature et la quantité de la substance dont l'immersion, le rejet ou l'abandon est autorisé;

b) le mode et la fréquence des immersions, des rejets ou des abandons, y compris, au besoin, leurs dates;

c) la manière de charger et d'entreposer la substance dont l'immersion, le rejet ou l'abandon est autorisé;

d) le lieu d'immersion, de rejet ou d'abandon;

e) la route du navire ou de l'aéronef qui transporte la substance jusqu'au lieu d'immersion, de rejet ou d'abandon; et

f) les précautions spéciales à prendre quant au chargement, au transport, à l'immersion, au rejet ou à l'abandon de la substance.

Duration

(3) Except where a permit specifies the date or dates on which dumping or disposal is authorized, it shall specify the period, not in excess of one year, for which it is valid.

Power to suspend, revoke or vary permit

(4) The Minister may suspend or revoke a permit or vary its terms and conditions where, having regard to the factors set out in Schedule III or in any report referred to in subsection 12(7), he deems it advisable to do so.

Publication in the *Canada Gazette*

11. (1) Where the Minister grants a permit or varies the terms or conditions of a permit, a copy of the permit and its terms and conditions or of the terms and conditions so varied, as the case may be, shall be published in the *Canada Gazette*.

Publication before dumping or loading

(2) Except in the circumstances described in paragraph 9(5)(*c*), publication pursuant to subsection (1) shall be made before the first date on which dumping, or loading for the purpose of dumping, is authorized in accordance with

(*a*) the permit, or

(*b*) if the terms and conditions of a permit have been varied, the terms and conditions so varied.

BOARD OF REVIEW

Notice of objection

12. (1) Where

(*a*) a permit has been granted but the applicant is dissatisfied with the terms and conditions thereof,

(*b*) a permit has been refused, or

(*c*) a permit has been suspended or revoked or the terms and conditions thereof have been varied pursuant to subsection 10(4), other than in accordance with the recommendations of a report referred to in subsection (7),

the applicant or the permit holder may, within thirty days of the receipt of a notice from the Minister that the permit has been granted or refused or that it has been suspended or revoked or that its terms and conditions have been varied, file a notice of objection.

Durée

(3) S'il ne stipule aucune date d'immersion, le permis doit préciser la durée de sa validité, qui ne peut excéder un an.

Suspension, retrait ou modification d'un permis

(4) Quand il l'estime souhaitable, le Ministre peut, compte tenu des facteurs énumérés à l'annexe III ou dans tout rapport visé au paragraphe 12(7), susprendre ou retirer un permis ou en modifier les conditions.

Publication dans la *Gazette du Canada*

11. (1) Le texte des permis que délivre le Ministre ou des modifications qu'il apporte à leurs conditions est publié dans la *Gazette du Canada*.

Moment de la publication

(2) Sauf circonstances prévues à l'alinéa 9(5)(*c*), la publication visée au paragraphe (1) doit avoir lieu avant la première des dates pour lesquelles

a) le permis, ou

b) dans le cas où le permis a été modifié, ses nouvelles conditions,

autorisent l'immersion ou le chargement aux fins d'immersion.

COMMISSION D'ENQUÊTE

Avis d'opposition

12. (1) Lorsqu'un permis

a) a été accordé mais que la personne qui en a fait la demande n'est pas satisfaite des conditions qu'il contient,

b) a été refusé, ou,

c) après avoir été délivré, a fait l'objet d'une suspension, d'un retrait ou d'une modification de ses conditions conformément aux dispositions du paragraphe 10(4) et non aux recommandations du rapport visé au paragraphe (7),

le demandeur ou le détenteur du permis peut, dans les trente jours suivant la réception de la part du Ministre, de l'avis de délivrance ou de refus, de suspension ou de retrait, ou de modification des conditions, déposer un avis d'opposition.

Establishment of Board of Review

(2) Upon receipt of a notice of objection referred to in subsection (1) within the time specified in that subsection, the Minister shall establish a Board of Review (in this section referred to as a "Board") consisting of not more than three persons, of whom the Chairman shall not be a public servant, and shall refer the matter raised by the notice to the Board.

Complaints from public

(3) Where the Minister receives complaints from members of the public, in respect of

(*a*) the granting of a permit or any terms and conditions thereof, or

(*b*) any variation of the terms and conditions of a permit

the Minister may, if he deems it advisable, establish a Board and may refer any or all such complaints to the Board.

Duties

(4) A Board shall inquire into any matter relevant to the purpose for which it was established and shall give all interested persons a reasonable opportunity of appearing before the Board, presenting evidence and making representations to it.

Publication of notice

(5) Where the Minister establishes a Board, he shall, at least seven clear days before the day the Board is scheduled to hold its first meeting at which interested persons may appear before it, cause a notice of such meeting to be published

(*a*) in a newspaper circulated in or near any locality that, in the opinion of the Minister, is likely to be affected by the dumping or disposal or proposed dumping or disposal; or

(*b*) in any other manner that the Minister deems appropriate.

Powers

(6) For the purpose of an inquiry under subsection (4), a Board has and may exercise all the powers of a person appointed as a commissioner under Part I of the *Inquiries Act*.

Report

(7) A Board, as soon as possible after the conclusion of an inquiry, shall submit a report with its recommendations to the Minister.

Constitution d'une commission d'enquête

(2) A la réception de l'avis d'opposition visé au paragraphe (1) dans le délai prescrit par ce paragraphe, le Ministre constitue une commission d'enquête (appelée au présent article la «commission») composée d'un maximum de trois personnes, et dont le président n'est pas fonctionnaire, à laquelle il renvoie l'étude de l'affaire.

Plaintes

(3) Lorsqu'il reçoit du public des plaintes relatives

a) à la délivrance ou aux conditions d'un permis, ou

b) à toute modification apportée à celles-ci,

le Ministre peut, à son appréciation, constituer une commission et lui renvoyer, en partie ou en totalité, l'étude de ces plaintes.

Mandat

(4) La commission fait enquête sur toute question concernant l'objet pour lequel elle a été constitutée et donne à toute personne intéressée la possibilité de comparaître devant elle et de lui présenter des éléments de preuve et des observations.

Communiqué

(5) Après constitution d'une commission, le Ministre, sept jours francs au moins avant la date prévue pour la première réunion de la commission, au cours de laquelle les personnes intéressées pourront comparaître devant elle, fait annoncer la réunion

a) dans un journal de la localité ou de la région qui, selon lui, est susceptible de subir les effets de l'immersion, du rejet ou de l'abandon, réalisé ou projeté; ou

b) de toute autre façon qu'il juge indiquée.

Pouvoirs

(6) Pour les besoins de l'enquête prévue au paragraphe (4), la commission a tous les pouvoirs d'un commissaire nommé en vertu de la Partie I de la *Loi sur les enquêtes*.

Rapport

(7) La commission remet au Ministre, le plus tôt possible après la fin de l'enquête, un rapport accompagné de ses recommandations.

OFFENCES

Dumping, loading in contravention of permit

13. (1) Every person who contravenes section 4, 5 or 6 is guilty of an offence and is liable on summary conviction to a fine not exceeding

(*a*) one hundred thousand dollars, where the offence involves a substance specified in Schedule I;

(*b*) seventy-five thousand dollars, where the offence involves a substance specified in Schedule II; or

(*c*) fifty thousand dollars, where the offence involves any substance not specified in Schedule I or II.

Dumping of ship, aircraft without permit

(2) Every person who contravenes section 7 is guilty of an offence and is liable on summary conviction to a fine not exceeding seventy-five thousand dollars.

Failure to report dumping

(3) Every person who fails to make a report as and when required under subsection 8(4) is guilty of an offence and is liable on summary conviction to a fine not exceeding seventy-five thousand dollars.

Other offences

(4) Every person who contravenes any provision of this Act, other than sections 4 to 7 or subsection 8(4), is guilty of an offence punishable on summary conviction.

Time limit

(5) No proceedings in respect of an offence under this section may be instituted after two years from the time when the subject-matter of the proceedings arose.

Continuing offences

14. (1) Where an offence under subsection 13(1) is committed on more than one day or is continued for more than one day, it shall be deemed to be a separate offence for each day on which the offence is committed or continued.

Order to refrain

(2) Where a person is convicted of an offence under subsection 13(1), the court

INFRACTIONS

Immersion, chargement, en contravention d'un permis

13. (1) Quiconque contrevient aux articles 4, 5 ou 6 commet une infraction et est passible, sur déclaration sommaire de culpabilité, d'une amende maximale de

a) cent mille dollars, lorsque l'infraction porte sur l'une des substances énumérées à l'annexe I;

b) soixante-quinze mille dollars, lorsque l'infraction porte sur l'une des substances énumérées à l'annexe II; ou

c) cinquante mille dollars, lorsque l'infraction porte sur une substance non comprise dans les annexes I et II.

Abandon sans permis d'un navire ou d'un aéronef

(2) Quiconque contrevient à l'article 7 commet une infraction et est passible, sur déclaration sommaire de culpabilité, d'une amende maximale de soixante-quinze mille dollars.

Immersion clandestine

(3) Quiconque néglige de rendre compte d'une immersion selon les modalités et au moment prescrits au paragraphe 8(4) commet une infraction et est passible, sur déclaration sommaire de culpabilité, d'une amende maximale de soixante-quinze mille dollars.

Autres infractions

(4) Quiconque contrevient à la présente loi, à l'exclusion des articles 4 à 7 ou du paragraphe 8(4), commet une infraction punissable sur déclaration sommaire de culpabilité.

Prescription

(5) L'action découlant d'une infraction visée au présent article se prescrit par deux ans.

Infractions prolongées

14. (1) Lorsqu'une infraction visée au paragraphe 13(1) est commise à plusieurs dates et pendant plusieurs jours consécutifs, elle est censée constituer une infraction distincte pour chacune des journées au cours desquelles elle est commise.

Ordonnance suspensive

(2) Lorsqu'une personne est déclarée coupable d'une infraction visée au para-

may, in addition to any punishment it may impose, order that person to refrain from committing any further such offence or to cease to carry on any activity specified in the order the carrying on of which, in the opinion of the court, will or is likely to result in the committing of any further such offence.

Civil remedies not suspended

(3) No civil remedy for any act or omission is suspended or affected by reason that the act or omission is an offence under this Act.

Action to enjoin not prejudiced by prosecution

(4) Notwithstanding that a prosecution has been instituted in respect of an offence under subsection 13(1), the Attorney General of Canada may commence and maintain proceedings to enjoin any conduct that constitutes an offence under that subsection.

Costs of the Crown

(5) Where the Minister directs any action to be taken by or on behalf of Her Majesty in right of Canada to repair or remedy any condition or mitigate any damage resulting from any act or omission by a person that is an offence under this Act, the costs and expenses of and incidental to the taking of such action, to the extent that such costs and expenses can be established to have been reasonably incurred in the circumstances, are recoverable by Her Majesty in right of Canada from that person with costs in proceedings brought or taken therefor in the name of Her Majesty in any court of competent jurisdiction.

Limitation period

(6) No proceedings pursuant to subsection (5) shall be commenced after two years from the time when the act or omission in respect of which the proceedings are brought or taken occurred or first occurred, as the case may be, or could reasonably be expected to have become known to the Minister.

Construction of subsection 450(5) of *Canada Shipping Act*

(7) Subsection 450(5) of the *Canada Shipping Act* is not to be construed so as to relieve any person from any liability under this Act.

graphe 13(1) la Cour peut, en sus des peines qu'elle impose par ailleurs, ordonner à cette personne de s'abstenir de commettre de nouveau cette infraction et de cesser toute activité, précisée dans cette ordonnance, qui, de l'avis de la Cour, entraînera certainement ou probablement la récidive.

Recours civils non suspendus

(3) Le fait qu'une action ou une omission constitue une infraction visée par la présente loi ne suspend ni ne modifie aucun recours civil ouvert par cette action ou cette omission.

Des poursuites n'excluent une demande d'injonction

(4) Indépendamment de toutes poursuites intentées à la suite d'une infraction visée au paragraphe 13(1), le procureur général du Canada peut introduire une action, ou continuer une action introduite, pour demander une injonction contre l'agissement constitutif de l'infraction.

Frais de la Couronne

(5) Lorsque, en raison d'une situation découlant d'une action ou d'une omission qui constitue une infraction à la présente loi, le Ministre fait prendre par Sa Majesté du chef du Canada ou pour son compte, des procédures visant à corriger cette situation, à y remédier, ou à réduire ou atténuer tout dommage résultant de cette action ou omission, les frais directs et indirects occasionnés par ces procédures, pour autant qu'ils se justifient dans les circonstances, peuvent être recouvrés par Sa Majesté du chef du Canada auprès de l'auteur de l'infraction, en même temps que les dépens de toute action intentée à cette fin au nom de Sa Majesté devant le tribunal compétent.

Délai de prescription

(6) Les procédures visées au paragraphe (5) se prescrivent par deux ans à partir de la date où l'acte ou l'omission ayant donné naissance aux procédures s'est produit, ou s'est produit pour la première fois, selon le cas, ou encore à partir de la date où l'acte ou l'omission aurait pu être porté pour la première fois à la connaissance du Ministre.

Interprétation du paragraphe 450(5) de la *Loi sur la marine marchande du Canada*

(7) Nulle interprétation du paragraphe 450(5) de la *Loi sur le marine marchande du Canada* ne dégage quiconque des responsabilités que lui impose la présente loi.

Manner of service

15. Except where otherwise provided by any Rules of the Federal Court that are applicable to proceedings under this Act, any document that, for the purposes of this Act, is to be served on a person may be served,

(*a*) in any case, by delivering a copy thereof personally to the person to be served or if he cannot be found by leaving a copy thereof at his latest known address;

(*b*) if the document is to be served on the master of a ship or on any other person employed on a ship and service cannot reasonably be effected in the manner provided in paragraph (*a*), by leaving a copy thereof for him on board the ship with the person who is, or appears to be, in command or charge of the ship;

(*c*) if the document is to be served on the pilot in command of an aircraft and service cannot reasonably be effected in the manner provided in paragraph (*a*), by leaving a copy thereof with the person who is, or appears to be, in charge of the aircraft; and

(*d*) if the document is to be served on a person in his capacity as owner or master of a ship or owner or pilot in command of an aircraft and service cannot reasonably be effected in the manner provided in paragraph (*a*) and the ship or aircraft is within Canadian waters or in Canada, whichever is applicable, by leaving a copy thereof with any agent of the owner residing in Canada or, where no such agent is known or can be found, by affixing a copy thereof to a prominent part of the ship or aircraft.

Identifying owner, master or pilot in command of ship or aircraft

16. (1) The owner or master of a ship or the owner or pilot in command of an aircraft may be charged with an offence under this Act as owner, master or pilot in

Mode de signification

15. Sauf disposition contraire des règlements ou des règles de la Cour fédérale applicables à une action intentée en vertu de la présente loi, la signification d'un document aux fins de la présente loi peut se faire,

a) dans tous les cas, par signification à personne d'une copie de ce document à son destinataire ou, s'il est impossible de le trouver, en laissant une copie de ce document à sa dernière adresse connue;

b) si le document doit être signifié au capitaine d'un navire ou à un membre de l'équipage d'un navire et qu'il ne peut raisonnablement être signifié de la manière prévue à l'alinéa *a*), en laissant une copie de ce document à son intention à bord du navire à la personne qui a ou paraît avoir le commandement ou la responsabilité du navire;

c) si le document doit être signifié au commandant de bord d'un aéronef et qu'il ne peut raisonnablement être signifié de la manière prévue à l'alinéa *a*), en laissant une copie de ce document à la personne qui a ou paraît avoir la responsabilité de l'aéronef; et

d) si le document doit être signifié à une personne en sa qualité de propriétaire ou de capitaine d'un navire ou de propriétaire ou de commandant de bord d'un aéronef, qu'il ne peut raisonnablement être signifié de la manière prévue à l'alinéa *a*) et que le navire ou l'aéronef se trouve dans les eaux canadiennes ou au Canada, selon le cas, en en laissant copie à un mandataire du propriétaire résidant au Canada ou, si on ne lui connaît pas de mandataire ou qu'on ne puisse trouver son mandataire, en affichant une copie de ce document bien en vue à bord du navire ou de l'aéronef.

Identité du propriétaire, du capitaine ou du commandant de bord d'un navire ou d'un aéronef

16. (1) Un acte d'accusation porté contre le propriétaire ou le capitaine d'un navire ou contre le propriétaire ou le commandant de bord d'un aéronef est valide

command, as the case may be, of the ship or aircraft if the ship or aircraft is adequately identified, and no such charge is invalid by reason only that it does not name the owner, master or pilot in command, as the case may be, of the ship or aircraft.

Officers, etc., of corporations

(2) Where a corporation commits an offence under section 13, any officer, director or agent of the corporation who directed, authorized, assented to, acquiesced in or participated in the commission of the offence is a party to and guilty of the offence and is liable on conviction to the punishment provided for the offence whether or not the corporation has been prosecuted or convicted.

Proof of offence

17. In a prosecution of a person for an offence under subsection 13(1) or (2), it is sufficient proof of the offence to establish that it was committed by

(*a*) an agent or employee of the accused, or

(*b*) where the accused is the master of a ship or the pilot in command of an aircraft, a member of the crew or other person on board the ship or aircraft,

whether or not any person referred to in paragraph (*a*) or (*b*) is identified or has been prosecuted for the offence, unless the accused establishes that the offence was committed without his knowledge or consent and that he exercised all due diligence to prevent its commission.

Certificate of analyst

18. (1) Subject to this section, a certificate of an analyst stating that he has analyzed or examined a substance and stating the result of his analysis or examination is admissible in evidence in any prosecution for an offence under section 13 and in the absence of evidence to the contrary is proof of the statements contained in the certificate without proof of the

même s'il ne désigne pas nommément ces personnes, à condition que l'aéronef ou le navire soit suffisamment identifié; l'accusation est valide même si elle ne désigne pas nommément le capitaine, le commandant de bord ou le propriétaire, selon le cas, du navire ou de l'aéronef.

Dirigeants de corporation, etc.

(2) Lorsqu'une corporation commet une infraction à l'article 13, tout dirigeant, administrateur ou mandataire de la corporation ayant ordonné ou autorisé l'acte constituant l'infraction, y ayant consenti ou y ayant participé, est partie à l'infraction, en est coupable et est passible, sur déclaration de culpabilité, de la peine correspondante, que la corporation ait été ou non poursuivie ou condamnée.

Preuve de l'infraction

17. Dans une poursuite intentée contre une personne à la suite d'une infraction au paragraphe 13(1) ou (2), il suffit, pour prouver cette infraction, d'établir qu'elle a été commise

a) par un mandataire ou un employé de l'accusé, ou

b) lorsque l'accusé est le capitaine d'un navire ou le commandant de bord d'un aéronef, par un membre de l'équipage ou toute autre personne se trouvant à bord du navire ou de l'aéronef,

que les personnes visées à l'alinéa *a*) ou *b*) soient ou non identifiées ou qu'elles aient été ou non poursuivies pour cette infraction, à moins que l'accusé n'établisse que l'infraction a été commise à son insu ou sans son consentement et qu'il a fait diligence pour prévenir sa perpétration.

Certificat de l'analyste

18. (1) Sous réserve du présent article, un certificat délivré par un analyste, attestant qu'il a procédé à une analyse ou à un examen de matière et énonçant ses conclusions, est admissible en preuve lors d'une poursuite consécutive à une infraction à l'article 13; faute de preuve contraire, il constitue la preuve des faits qui y sont énoncés, sans qu'il soit nécessaire d'authensignature or the official character of the person appearing to have signed the certificate.

Attendance of analyst

(2) The party against whom a certificate of an analyst is produced pursuant to subsection (1) may, with leave of the court, require the attendance of the analyst for the purposes of cross-examination.

Notice

(3) No certificate shall be received in evidence pursuant to subsection (1) unless the party intending to produce it has given to the party against whom it is intended to be produced reasonable notice of such intention together with a copy of the certificate.

JURISDICTION

Nearest court has jurisdiction for certain offences

19. (1) Where an offence against this Act is committed by a person, whether or not he is a Canadian citizen, in any area of the sea referred to in paragraphs 2(2)(*a*) to (*e*), the offence is within the competence of and shall be tried by the court having jurisdiction in respect of similar offences in the territorial division nearest to the place where the offence was committed and shall be tried in the same manner as if the offence had been committed within that territorial division.

Where offence deemed to have been committed

(2) An offence to which subsection (1) applies shall, for the purposes of that subsection, be deemed to have been committed either in the place where the offence was actually committed or in the place in which the accused is found.

Any court has jurisdiction for certain offences

(3) Where an offence against this Act is committed by a person, whether or not he is a Canadian citizen, in any area of the sea referred to in paragraph 2(2)(*f*) or (*g*), the offence is within the competence of and shall be tried by any court having jurisdiction in respect of similar offences committed by persons within the limits of its ordinary jurisdiction and shall be tried in the same manner as if the offence had been committed within the jurisdiction of the court before which it is tried.

tifier la signature ou d'établir le caractère officiel de la personne qui paraît avoir signé ce certificat.

Présence de l'analyste

(2) La partie à l'encontre de laquelle le certificat d'un analyste est produit aux termes du paragraphe (1) peut, avec la permission de la cour, demander que l'analyste comparaisse devant la cour pour subir un contre-interrogatoire.

Préavis

(3) Un certificat n'est admis en preuve aux termes du paragraphe (1) que si la partie qui se propose de le produire donne à la partie adverse un préavis raisonnable de son intention, accompagné d'une copie du certificat.

COMPÉTENCE

Infractions du ressort du tribunal compétent le plus proche

19. (1) Que son auteur ait ou non la citoyenneté canadienne, toute infraction à la présente loi commise dans les eaux visées aux alinéas 2(2)*a*) à *e*) relève du tribunal compétent pour des infractions similaires dans la circonscription territoriale la plus proche du lieu de l'infraction et elle est jugée par ce tribunal comme si elle avait été commise dans ladite circonscription.

Lieu présumé de l'infraction

(2) Le lieu d'une infraction visée au paragraphe (1) est présumé, pour l'application de ce paragraphe, être soit celui où l'infraction a été effectivement commise, soit celui où est trouvé l'accusé.

Infractions du ressort de tout tribunal compétent

(3) Que son auteur ait ou non la citoyenneté canadienne, toute infraction à la présente loi commise dans les eaux visées aux alinéas 2(2)*f*) ou *g*) relève du tribunal compétent pour des infractions similaires commises dans les limites de son ressort normal et elle est jugée par ce tribunal comme si elle avait été commise dans le ressort de ce tribunal.

INSPECTORS AND ANALYSTS

Appointment of inspectors and analysts

20. (1) The Minister may designate as an inspector or analyst for the purposes of this Act any person who, in his opinion, is qualified to be so designated.

Inspector to show certificate of designation

(2) An inspector shall be furnished with a certificate of his designation as an inspector and on entering any place or boarding any ship or aircraft pursuant to subsection 21(1) shall, if so required, produce the certificate to the person in charge thereof.

Powers of inspectors

21. (1) An inspector may, at any reasonable time,

(*a*) enter any place in which he reasonably believes a substance intended for dumping or disposal is being loaded, or

(*b*) go on board any ship anywhere in Canada or within any area of the sea referred to in paragraphs 2(2)(*a*) to (*e*) or any aircraft if he reasonably believes that such ship or aircraft has on board a substance intended for dumping

for the purpose of determining whether any provision of this Act has been or is being contravened.

Idem

(2) For the purposes of carrying out his functions under subsection (1), an inspector may

(*a*) examine any substance found in any place entered or on any ship or aircraft boarded and open any container found therein that he has reason to believe contains any substance intended for dumping or disposal and take samples thereof;

(*b*) require any person in any place entered or on any ship or aircraft boarded to produce for inspection or for the purpose of obtaining copies thereof or extracts therefrom any books or other documents or papers containing any matter relevant to the enforcement of this Act;

INSPECTEURS ET ANALYSTES

Nomination des inspecteurs et des analystes

20. (1) Le Ministre peut, pour l'application de la présente loi, nommer inspecteur ou analyste toute personne qu'il estime compétente.

L'inspecteur doit montrer son certificat

(2) L'inspecteur doit être pourvu d'un certificat attestant sa qualité; en opérant, en un lieu quelconque ou à bord d'un navire ou d'un aéronef, les visites autorisées par le paragraphe 21(1), il doit à son entrée, s'il en est requis, présenter ce certificat à la personne responsable.

Pouvoirs des inspecteurs

21. (1) L'inspecteur peut, à tout moment raisonnable,

a) pénétrer dans un lieu où il a des motifs raisonnables de croire entreposée une substance destinée à être immergée, rejetée ou abandonnée, ou

b) monter à bord d'un navire, en tout lieu du Canada ou dans toute zone de mer visée aux alinéas 2(2)*a*) à *e*), ou d'un aéronef où il a des raisons de croire à la présence d'une substance destinée à être immergée,

afin de déterminer s'il y a eu ou s'il y a contravention à la présente loi.

Idem

(2) Dans l'exécution des fonctions que lui attribue le paragraphe (1), l'inspecteur peut

a) examiner toute substance trouvée dans le lieu, le navire ou l'aéronef où il procède à une visite, y ouvrir les contenants qu'il soupçonne de renfermer une substance destinée à être immergée, rejetée ou abandonnée et en prélever des échantillons;

b) exiger de toute personne se trouvant dans le lieu, le navire ou l'aéronef où il procède à une visite la communication, pour vérification, reproduction ou établissement d'extraits, des livres et autres documents contenant des éléments utiles à l'application de la présente loi;

(*c*) travel on any ship or aircraft that is loaded with a substance intended for dumping; and

(*d*) detain any ship or aircraft for a reasonable time.

Inspector to receive accommodation

(3) Where an inspector travels on any ship or aircraft pursuant to paragraph (2)(*c*), he shall be carried free of charge to and from the dumping site and the person in command of the ship or aircraft shall provide the inspector with suitable accommodation and food.

Assistance to inspector

(4) The owner or person in charge of any place entered or any ship or aircraft boarded by an inspector pursuant to subsection (1) and every person found therein shall give the inspector all reasonable assistance in his power to enable the inspector to carry out his duties and functions under this Act and shall furnish him with such information with respect to the administration of this Act as he may reasonably require.

Obstruction

(5) No person shall obstruct or hinder an inspector in the carrying out of his duties and functions under this Act.

DETENTION OF SHIPS

Detention of ship

22. (1) Where the owner or master of a ship is charged with an offence under this Act, an inspector may make a detention order in respect of the ship.

Order in writing

(2) A detention order made under subsection (1) shall be in writing and addressed to all persons at any port in Canada where the ship to which the order relates is or will be who are empowered to give a clearance in respect of the ship.

Duty of persons empowered to give clearance

(3) Subject to subsection (4), no person to whom a detention order made under subsection (1) is addressed shall, after notice of such order is received by him, give clearance in respect of the ship to which the order relates.

c) prendre place à bord d'un navire ou d'un aéronef chargé d'une substance destinée à être immergée; et

d) ordonner l'arrêt d'un navire ou d'un aéronef pour un délai raisonnable.

Prise en charge de l'inspecteur

(3) L'inspecteur qui, en application de l'alinéa (2)*c*), se rend sur le lieu d'immersion a droit à la gratuité du transport aller et retour; de plus, la personne qui a le commandement du navire ou de l'aéronef est tenu de lui assurer repas et hébergement dans des conditions convenables.

Obligation d'assistance

(4) Le propriétaire ou le responsable du lieu, du navire ou de l'aéronef où l'inspecteur procède aux visites autorisées par le paragraphe (1) et quiconque s'y trouve doivent dans la mesure du possible lui prêter assistance pour lui permettre d'exécuter les fonctions que lui confère la présente loi et lui fournir les renseignements qu'il peut normalement exiger concernant l'application de la présente loi.

Obstruction

(5) Il est interdit de gêner ou d'entraver un inspecteur dans l'exécution des fonctions que lui confère la présente loi.

ARRÊT DE NAVIRES

Arrêt de navires

22. (1) Lorsque le propriétaire ou le capitaine d'un navire est accusé d'une infraction à la présente loi, l'inspecteur peut ordonner l'arrêt du navire.

Ordre écrit

(2) L'ordre d'arrêt prévu au paragraphe (1) est adressé par écrit à quiconque a, dans un port du Canada où se trouve ou se trouvera le navire visé par cet ordre d'arrêt, le pouvoir de donner congé à ce navire.

Obligation des personnes qui ont le pouvoir de donner congé

(3) Sous réserve du paragraphe (4), il est interdit à la personne qui a reçu avis d'un ordre d'arrêt rendu en vertu du paragraphe (1) de donner congé au navire visé par cet ordre.

When clearance given

(4) A person to whom a detention order made under subsection (1) is addressed and who has received notice of the order may give clearance in respect of the ship to which the order relates where

(*a*) the person charged with the offence that gave rise to the making of the detention order appears in Canada to answer to the charge;

(*b*) security for payment of the maximum fine that might be imposed as a result of a conviction of the person charged with that offence and of costs related to proceedings in connection with the charge, or payment of such lesser amount as is approved by the Minister or a person designated by him for such purpose, is given to Her Majesty in right of Canada; or

(*c*) proceedings in respect of the alleged offence that gave rise to the making of the detention order are discontinued.

SEIZURE AND FORFEITURE

Seizure of ships, aircraft

23. (1) Where an inspector has reasonable grounds for believing that an offence has been committed under subsection 13(1), (2) or (3) by an owner of any ship or aircraft, he may, with the consent of the Minister, seize the ship or aircraft anywhere in Canada and, in the case of a ship, within any area of the sea referred to in paragraphs 2(2)(*a*) to (*e*).

Custody

(2) Any ship or aircraft seized under subsection (1) shall be delivered into the custody of such person as the Minister directs.

Cas où le congé est donné

(4) La personne qui a reçu avis d'un ordre d'arrêt rendu en vertu du paragraphe (1) peut donner congé au navire visé par cet ordre

a) lorsque l'accusé dont l'infraction a donné lieu à l'ordre d'arrêt comparaît au Canada pour répondre de cette accusation;

b) lorsque est remise à Sa Majesté du chef du Canada caution pour le paiement de l'amende maximale et des dépens imposé à l'accusé en cas de déclaration de culpabilité ou d'une somme inférieure, sur approbation du Ministre ou d'une personne qu'il désigne à cet effet; ou

c) lorsqu'il y a désistement des procédures relatives à l'infraction présumée qui a donné lieu à l'ordre d'arrêt.

MISE SOUS SÉQUESTRE ET CONFISCATION

Mise sous séquestre de navires ou d'aéronefs

23. (1) Lorsqu'il a des motifs raisonnables de croire qu'une infraction visée au paragraphe 13(1), (2) ou (3) a été commise par le propriétaire d'un navire ou d'un aéronef, l'inspecteur peut, avec le consentement du Ministre, mettre le navire ou l'aéronef sous séquestre en tout lieu du Canada et, s'il s'agit d'un navire, dans toute zone de mer visée aux alinéas 2(2)*a*) à *e*).

Garde

(2) Le navire ou l'aéronef mis sous séquestre en vertu du paragraphe (1) est placé sous la garde de la personne que désigne le Ministre.

Discharge of cargo not subject to forfeiture

(3) Where any ship or aircraft seized under subsection (1) has cargo on board, the cargo may be discharged, under supervision of the person into whose custody the ship or aircraft was delivered, at the port or place in Canada capable of receiving the cargo that is nearest to the place of seizure or at such other port or place as is satisfactory to that person.

Sale of perishable cargo

(4) Where any ship or aircraft seized under subsection (1) has cargo on board that is perishable, the inspector by whom the ship or aircraft was seized or, if the ship or aircraft has been delivered into the custody of a person in accordance with subsection (2), that person may sell such cargo or the portion thereof that is perishable, as the case may be, and the proceeds of the sale shall be paid to the Receiver General or shall be deposited in a chartered bank to the credit of the Receiver General.

Order for delivery of cargo

(5) The owner of any cargo of any ship or aircraft seized under subsection (1) may apply to the Federal Court for an order requiring any person in whose custody such cargo or the proceeds of any sale thereof is, to deliver the cargo or the proceeds of sale thereof to him, and the Court may make such an order where it is satisfied that the applicant is the owner of the cargo to which the application relates.

Redelivery on deposit of security

24. (1) Where a ship or aircraft has been seized under subsection 23(1), the Federal Court may, with the consent of the Minister, order redelivery thereof or delivery of the proceeds realized from a sale of any perishable cargo under subsection 23(4) to the person from whom the ship or aircraft

Déchargement de la cargaison non susceptible de confiscation

(3) La cargaison d'un navire ou d'un aéronef mis sous séquestre en vertu du paragraphe (1) peut être déchargée, sous la surveillance de la personne ayant la garde du navire ou de l'aéronef dans tout port ou lieu du Canada, équipé pour cette opération, le plus proche du lieu de la mise sous séquestre ou dans tout autre port ou lieu que cette personne juge indiqué.

Vente de la cargaison périssable

(4) La cargaison périssable d'un navire ou d'un aéronef mis sous séquestre en vertu du paragraphe (1) peut être vendue, selon le cas, par l'inspecteur qui a mis le navire ou l'aéronef sous séquestre ou par la personne qui en a, conformément au paragraphe (2), reçu la garde; le produit de la vente est versé à l'ordre du receveur général ou déposé à son compte dans une banque à charte.

Ordonnance portant remise de la cargaison

(5) Le propriétaire de la cargaison d'un navire ou d'un aéronef mis sous séquestre en vertu du paragraphe (1) peut requérir de la Cour fédérale une ordonnance enjoignant à quiconque a la garde de cette cargaison ou du produit de sa vente de les lui remettre; la Cour peut rendre cette ordonnance lorsqu'elle est convaincue que le requérant est le propriétaire de la cargaison visée par la demande.

Remise en possession moyennant caution

24. (1) Lorsqu'un navire ou un aéronef est mis sous séquestre en vertu du paragraphe 23(1), la Cour fédérale peut, avec le consentement du Ministre, ordonner la remise du navire ou de l'aéronef ou du produit de la vente de la cargaison périssable visée au paragraphe 23(4) à la per-was seized if security in the form of a bond in an amount and form satisfactory to the Minister is given to him.

Seized ship, etc., to be returned unless proceedings instituted

(2) Any ship or aircraft seized under subsection 23(1), or any security given to the Minister under subsection (1) of this section shall be returned or paid to the person from whom the ship or aircraft was seized within thirty days from the seizure thereof unless, prior to the expiration of those thirty days, proceedings are instituted in respect of an offence under subsection 13(1), (2) or (3) alleged to have been committed by the owner of the ship or aircraft, as the case may be.

Court may order forfeiture

25. Where the owner of any ship or aircraft has been convicted of an offence under subsection 13(1), (2) or (3), the convicting court may, if the ship or aircraft was seized under section 23, in addition to any other penalty imposed, order that the ship or aircraft be forfeited, and upon the making of such order the ship or aircraft is forfeited.

Disposal of forfeited ship, aircraft, etc.

26. (1) Where proceedings referred to in subsection 24(2) are instituted within the time therein provided and, at the final conclusion of those proceedings, any ship or aircraft or any security given under subsection 24(1) is ordered to be forfeited, it may be disposed of as the Governor in Council directs.

Return of seized ship, etc., where no forfeiture ordered

(2) Where any ship or aircraft has been seized under subsection 23(1) and proceedings referred to in subsection 24(2) are instituted, but the ship or aircraft is not, at the final conclusion of the proceedings, or-

sonne en possession de laquelle se trouvait le navire ou l'aéronef lors de sa mise sous séquestre, moyennant le dépôt auprès du Ministre d'une caution sous la forme d'un nantissement dont le Ministre juge le montant et la nature satisfaisants.

Restitution du navire, etc., mis sous séquestre, à défaut d'intenter une action

(2) Le navire ou l'aéronef mis sous séquestre en vertu du paragraphe 23(1) ou la caution déposée auprès du Ministre en vertu du paragraphe (1) du présent article sont restitués à la personne en la possession de laquelle se trouvait le navire ou l'aéronef lors de sa mise sous séquestre, dans les trente jours suivant celle-ci, à moins que des procédures ne soient intentées, avant l'expiration de ce délai, contre le propriétaire, du navire ou de l'aéronef, soupçonné d'avoir commis une infraction au paragraphe 13(1), (2) ou (3).

Confiscation judiciaire

25. Lorsque le propriétaire d'un navire ou d'un aéronef est déclaré coupable d'une infraction visée au paragraphe 13(1), (2) ou (3), la Cour qui prononce la condamnation peut, si le navire ou l'aéronef a été mis sous séquestre en vertu de l'article 23, ordonner en sus des peines qu'elle impose par ailleurs, la confiscation du navire ou de l'aéronef; cette ordonnance opère aussitôt confiscation du navire ou de l'aéronef.

Réalisation après confiscation d'un navire, aéronef, etc.

26. (1) Lorsque sont intentées, dans les délais prévus, les procédures visées au paragraphe 24(2) et que, lors du règlement définitif de ces procédures, la Cour ordonne la confiscation d'un navire, d'un aéronef ou d'une caution donnée en vertu du paragraphe 24(1), il est disposé des biens confisqués selon les directives du gouverneur en conseil.

Restitution d'un navire etc., mis sous séquestre mais non confisqué

(2) Lorsqu'un navire ou un aéronef est mis sous séquestre en vertu du paragraphe 23(1) et que les procédures visées au paragraphe 24(2) sont intentées, mais que, lors du règlement définitif de ces procédures, la

dered to be forfeited, the ship or aircraft shall be returned, the proceeds of any sale of the cargo under subsection 23(4) shall be paid or any security given to the Minister under subsection 24(1) shall be returned to the person from whom the ship or aircraft was seized, unless that person has been convicted of an offence against this Act, in which case the ship or aircraft and any cargo or the proceeds or security may be retained until the fine is paid or the ship or aircraft and any cargo may be sold under execution in satisfaction of the fine, or the proceeds realized from the sale of the cargo or the security or any part thereof may be applied in payment of the fine.

Application by person claiming interest

27. (1) Where any ship or aircraft has been ordered to be forfeited, any person (other than a person who was a party to the proceedings that resulted in such order) who claims an interest in the ship or aircraft as owner, mortgagee, lien holder or holder of any other claim under Canadian law may, within thirty days after the ship or aircraft is ordered to be forfeited, apply by notice in writing to the Federal Court for an order under subsection (5).

Date of hearing

(2) The Federal Court shall fix a day for the hearing of an application made under subsection (1).

Notice

(3) An applicant for an order under subsection (5) shall, at least thirty days prior to the day fixed under subsection (2) for the hearing of the application, serve a notice of the application and of the hearing on the Minister and on all other persons claiming an interest in the ship or aircraft

Cour n'ordonne pas la confiscation du navire ou de l'aéronef, ceux-ci sont restitués, le produit de la vente de cargaison visée au paragraphe 23(4) est versé et la caution déposée auprès du Ministre en vertu du paragraphe 24(1) du présent article est remise à la personne en possession de laquelle se trouvait le navire ou l'aéronef lors de sa mise sous séquestre, sauf si cette personne a été déclarée coupable d'une infraction à la présente loi; en ce cas, ou bien le navire ou l'aéronef et la cargaison, le produit de la vente ou la caution sont placés sous arrêt jusqu'au paiement de l'amende, ou bien le navire ou l'aéronef et la cargaison peuvent être vendus par exécution forcée pour payer l'amende, ou bien le produit de la vente de la cargaison ou la caution peuvent, en tout ou en partie, être affectés au paiement de l'amende.

Requête par quiconque revendique un droit

27. (1) Lorsque la Cour ordonne la confiscation d'un navire ou d'un aéronef, quiconque (à l'exclusion des parties aux procédures dont résulte l'ordonnance de confiscation) revendique un droit sur ce navire ou cet aéronef à titre de propriétaire, de créancier hypothécaire, de détenteur de privilège ou d'autre créancier en vertu du droit canadien peut, dans les trente jours suivant l'ordonnance de confiscation, requérir de la Cour fédérale, par avis écrit, une ordonnance en vertu du paragraphe (5).

Date de l'audition

(2) La Cour fédérale fixe la date d'audition de la requête présentée en vertu du paragraphe (1).

Avis

(3) Quiconque requiert une ordonnance en vertu du paragraphe (5) doit donner avis de la requête et de la date fixée en vertu du paragraphe (2) pour l'audition de la requête, au moins trente jours avant cette date, au Ministre et à toute personne qui, au su du requérant, revendique sur le

that is the subject-matter of the application as owner, mortgagee, lien holder or holder of any other claim under Canadian law of whom he has knowledge.

Notice of intervention

(4) Each person, other than the Minister, who is served with a notice under subsection (3) and who intends to appear at the hearing of the application to which the notice relates shall, at least ten days prior to the day fixed for the hearing, file a notice of intervention in the Registry of the Federal Court and serve a copy thereof on the Minister and on the applicant.

Order declaring nature and extent of interests

(5) Where, on the hearing of an application under this section, the Federal Court is satisfied that the applicant, or the intervenors, if any, or any of them,

(*a*) is innocent of any complicity in any conduct that caused the ship or aircraft to be subject to forfeiture and of any collusion in relation to any such conduct, and

(*b*) exercised all reasonable care in respect of the persons permitted to obtain possession and use of the ship or aircraft to satisfy himself that it was not likely to be used contrary to the provisions of this Act or, in the case of a mortgagee or lien holder (other than the holder of a maritime lien or statutory right *in rem*) that he exercised such care with respect to the mortgagor or the lien giver,

those of the applicant and the intervenors in respect of whom the Court is so satisfied are entitled to an order declaring that their interests are not affected by the forfeiture and declaring the nature and extent of each of their interests and the priorities among them, and the court may, in addition, order that the ship or aircraft to which the interests relate be delivered to one or more of the persons found to have an interest therein or that an amount equal to the value of each of the interests so declared be paid to the persons found to have those interests.

navire ou l'aéronef, objet de la requête, un droit à titre de propriétaire, de créancier hypothécaire, de détenteur de privilège ou d'autre créancier en vertu du droit canadien.

Avis d'intervention

(4) A l'exception du Ministre, toute personne qui reçoit signification d'un avis en vertu du paragraphe (3) et se propose de comparaître lors de l'audition de la requête visée par cet avis doit déposer au greffe de la Cour fédérale, au moins dix jours avant la date fixée pour cette audition, un avis d'intervention, dont elle fait tenir copie au Ministre et au requérant.

Ordonnance déclarative de la nature et de l'étendue des droits

(5) Lorsque, après l'audition d'une requête présentée en vertu du présent article, la Cour fédérale est convaincue que le requérant ou qu'un intervenant

a) n'est coupable ni de complicité ni de collusion à l'égard des actes qui ont rendu le navire ou l'aéronef susceptible de confiscation, et

b) a fait toute diligence pour s'assurer que les personnes habilitées à la possession et à l'exploitation du navire ou de l'aéronef ne risquaient pas en cette qualité de contrevenir à la présente loi ou, dans le cas d'un créancier hypothécaire ou d'un détenteur de privilège (à l'exclusion du détenteur d'un privilège maritime ou d'un droit *in rem* créé par une loi), qu'il a fait toute diligence en ce sens à l'égard du débiteur hypothécaire ou du débiteur ayant consenti le privilège,

ce requérant et cet intervenant sont fondés à obtenir une ordonnance préservant leurs droits des effets de la confiscation et déclarant la nature et l'étendue de leurs droits ainsi que leur rang respectif; la Cour peut en outre ordonner de remettre le navire ou l'aéronef sur lequel s'exercent ces droits en possession de l'une ou de plusieurs des personnes dont elle constate les droits, ou de verser à chacune d'elles une somme égale à la valeur de leurs droits respectifs.

REGULATIONS

Regulations

28. (1) The Governor in Council may make regulations

(*a*) for carrying out and giving effect to the provisions of the Convention;

(*b*) prescribing the form of any application under this Act;

(*c*) specifying the information required to be contained in any application under this Act;

(*d*) specifying the information required to be contained in any report under subsection 8(4);

(*e*) respecting methods of sampling and analysis of any material for the purposes of this Act;

(*f*) prescribing fees in respect of any application;

(*g*) specifying for the purposes of paragraph 2(2)(*e*) areas of the sea adjacent to areas described in paragraphs 2(2)(*a*) to (*d*);

(*h*) prescribing for the purposes of paragraph 9(5)(*b*), the maximum quantity or concentration of any substance specified in Schedule I that may be contained in other substances; and

(*i*) prescribing any other thing that by this Act is to be prescribed.

Amendments to schedules

(2) The Governor in Council may, on the recommendation of the Minister, by order, amend any schedule by adding thereto or deleting therefrom any substance or item, whichever is applicable.

Report

(3) The Minister shall, within three months after the 31st day of December in each year, cause copies of any reports that he has made in the preceding year pursuant to the Convention to the organization responsible under the Convention for secretariat duties in relation to the Convention to be laid before Parliament or, if Parliament is not then sitting, on any of the first fifteen days next thereafter that Parliament is sitting.

COMMENCEMENT

Coming into force

29. This Act shall come into force on a day to be fixed by proclamation.

RÈGLEMENTS

Règlements

28. (1) Le gouverneur en conseil peut établir des règlements

a) mettant en œuvre la Convention;

b) fixant la forme des demandes prévues par la présente loi;

c) précisant les renseignements à fournir dans les demandes prévues par la présente loi;

d) précisant les renseignements à fournir dans les rapports prévus par le paragraphe 8(4);

e) concernant les méthodes d'échantillonnage et d'analyse de matière à employer aux fins de la présente loi;

f) fixant les droits de demande à acquitter;

g) précisant, aux fins de l'alinéa 2(2)*e*), les zones de mer contiguës aux zones visées aux alinéas 2(2)*a*) à *d*);

h) déterminant, aux fins de l'alinéa 9(5)*b*), la quantité ou la concentration maximale de l'une des substances énumérées à l'annexe I pouvant être contenue dans d'autres substances; et

i) prescrivant toute autre mesure selon que la présente loi l'exige.

Modification des annexes

(2) Le gouverneur en conseil peut, sur recommandation du Ministre, modifier par décret toute annexe.

Rapport

(3) Le Ministre dépose devant le Parlement, dans les trois premiers mois de chaque année, ou, s'il ne siège pas alors, dans les quinze premiers jours de la séance suivante, copie des rapports qu'il a présentés l'année précédente, conformément à la Convention, à l'organisation chargée, aux termes de cette dernière, des fonctions de secrétariat relatives à celle-ci.

ENTRÉE EN VIGUEUR

Entrée en vigueur

29. La présente loi entrera en vigueur à une date qui sera fixée par proclamation.

SCHEDULE I

PROHIBITED SUBSTANCES

1. Organohalogen compounds.
2. Mercury and mercury compounds.
3. Cadmium and cadmium compounds.
4. Persistent plastics and other persistent synthetic materials.
5. Crude oil, fuel oil, heavy diesel oil, and lubricating oils, hydraulic fluids and any mixtures containing any of them.
6. High-level radioactive wastes or other high-level radioactive matter that may be prescribed.
7. Substances in whatever form produced for biological and chemical warfare.

ANNEXE I

SUBSTANCES INTERDITES

1. Les composés organohalogénés.
2. Le mercure et ses composés.
3. Le cadium et ses composés.
4. Les plastiques non destructibles et autres matières synthétiques non destructibles.
5. Le pétrole brut, le fuel, le carburant diesel lourd et les huiles de graissage, les fluides hydrauliques ainsi que les mélanges contenant ces produits.
6. Les déchets fortement radioactifs et autres matières fortement radioactives désignés par règlement.
7. Les substances produites pour la guerre biologique et chimique sous quelque forme que ce soit.

SCHEDULE II

RESTRICTED SUBSTANCES

1. Arsenic and its compounds.
2. Lead and its compounds.
3. Copper and its compounds.
4. Zinc and its compounds.
5. Organosilicon compounds.
6. Cyanides.
7. Fluorides.
8. Pesticides and their by-products not included in Schedule I.
9. Beryllium and its compounds.
10. Chromium and its compounds.
11. Nickel and its compounds.
12. Vanadium and its compounds.
13. Containers and scrap metal.
14. Radioactive wastes or other radioactive matter not included in Schedule I.
15. Substances that by reason of their bulk would interfere with fishing.

ANNEXE II

SUBSTANCES RÉGLEMENTÉES

1. L'arsenic et ses composés.
2. Le plomb et ses composés.
3. Le cuivre et ses composés.
4. Le zinc et ses composés.
5. Les composés organosiliconés.
6. Les cyanures.
7. Les fluorures.
8. Les pesticides et sous-produits de pesticides non visés à l'annexe I.
9. Le béryllium et ses composés.
10. Le chrome et ses composés.
11. Le nickel et ses composés.
12. Le vanadium et ses composés.
13. Les conteneurs et les déchets métalliques.
14. Les déchets radioactifs ou autres matières radioactives non comprises à l'annexe I.
15. Toute substance qui, de par son volume, gênerait la pêche.

SCHEDULE III

FACTORS TO BE TAKEN INTO ACCOUNT IN GRANTING PERMITS

1. CHARACTERISTICS AND COMPOSITION OF SUBSTANCE

(1) Total amount and average composition of substance dumped (e.g. per year).

(2) Form (e.g. solid, sludge, liquid or gaseous).

(3) Properties: physical (e.g. solubility and density), chemical and biochemical (e.g. oxygen demand, nutrients) and biological (e.g. presence of viruses, bacteria, yeasts and parasites).

(4) Toxicity.

(5) Persistence: physical, chemical and biological.

(6) Accumulation and biotransformation in biological materials or sediments.

(7) Susceptibility to physical, chemical and biochemical changes and interaction in the aquatic environment with other dissolved organic and inorganic materials.

(8) Probability of production of taints or other changes reducing marketability of resources (fish and shellfish).

2. CHARACTERISTICS OF DUMPING SITE AND METHOD OF DEPOSIT

(1) Location (e.g. co-ordinates of the dumping site, depth and distance from the coast) and location in relation to other areas (e.g. amenity areas, spawning, nursery and fishing areas and exploitable resources).

(2) Rate of disposal per specific period (e.g. quantity per day, per week, per month).

(3) Methods of packaging and containment, if any.

(4) Initial dilution achieved by proposed method of release.

(5) Dispersal characteristics (e.g. effects of currents, tides and wind on horizontal transport and vertical mixing).

(6) Water characteristics (e.g. temperature, pH, salinity, stratification, oxygen indices of pollution—dissolved oxygen (DO), chemical oxygen demand (COD), biochemical oxygen demand (BOD)—nitrogen present in organic and mineral form including ammonia, suspended matter, other nutrients and productivity).

ANNEXE III

FACTEURS À PRENDRE EN CONSIDÉRATION LORS DE LA DÉLIVRANCE DES PERMIS

1. CARACTÉRISTIQUES ET COMPOSITION DE LA SUBSTANCE

(1) Quantité totale et composition moyenne de la substance immergée (exemple: par an).

(2) Forme, par exemple solide, boueuse, liquide ou gazeuse.

(3) Propriétés physiques (telles que solubilité et densité), chimiques et biochimiques (telles que demande en oxygène, éléments nutritifs) et biologiques (telles que présence de virus, bactéries, levures, parasites).

(4) Toxicité.

(5) Persistance: physique, chimique et biologique.

(6) Accumulation et transformation biologique dans les matières et sédiments biologiques.

(7) Sensibilité aux transformations physiques, chimiques et biochimiques et interaction dans le milieu aquatique avec d'autres matières organiques et inorganiques dissoutes.

(8) Probabilité de contamination et autres altérations diminuant la valeur commerciale des ressources marines (poissons, crustacés et mollusques testacés, etc.).

2. CARACTÉRISTIQUES DU LIEU D'IMMERSION ET MÉTHODE DE DÉPÔT

(1) Emplacement (coordonnées de la zone d'immersion, profondeur et distance des côtes), situation par rapport à d'autres emplacements (tels que zones d'agrément, de frai, de culture et de pêche, et ressources exploitables).

(2) Cadence d'évacuation de la matière (par exemple, quotidienne, hebdomadaire, mensuelle).

(3) Méthodes d'emballage et de conditionnement, le cas échéant.

(4) Dilution initiale réalisée par la méthode de décharge proposée.

(5) Caractéristiques de dispersion (telles qu'effets des courants, des marées et du vent sur le déplacement horizontal et le brassage vertical).

(6) Caractéristiques de l'eau (telles que température, pH, salinité, stratification, indices de pollution: notamment oxygène dissous (OD), demande biochimique en oxygène (DBO), demande chimique en oxygène (DCO), présence d'azote sous forme organique ou minérale et notamment présence d'ammoniaque, de matières en suspension, autres matières nutritives, productivité).

SCHEDULE III—*Concluded*

(7) Bottom characteristics (e.g. topography, geochemical and geological characteristics and biological productivity).

(8) Existence and effects of other dumpings that have been made in the dumping site (e.g. heavy metal background reading and organic carbon content).

(9) In issuing a permit for dumping, consideration should be given whether an adequate scientific basis exists for assessing the consequences of such dumping, as outlined in this Schedule taking into account seasonal variations.

3. GENERAL CONSIDERATIONS AND CONDITIONS

(1) Possible effects on amenities (e.g. presence of floating or stranded material, turbidity, objectionable odour, discoloration and foaming).

(2) Possible effects on marine life, fish and shellfish culture, fish stocks and fisheries, seaweed harvesting and culture.

(3) Possible effects on other uses of the sea (e.g. impairment of water quality for industrial use, underwater corrosion of structures, interference with ship operations from floating substances, interference with fishing or navigation through deposit of waste or solid objects on the sea floor and protection of areas of special importance for scientific or conservation purposes).

(4) The practical availability of alternative land based methods of treatment, disposal or elimination, or of treatment to render the matter less harmful for dumping at sea.

ANNEXE III—*Fin*

(7) Caractéristiques du fond (telles que topographie, caractéristiques géochimiques et géologiques, productivité biologique).

(8) Existence et effets d'autres immersions pratiquées dans la zone d'immersion (par exemple, relevés indiquant la présence de métaux lourds et teneur en carbone organique).

(9) Lors de la délivrance d'un permis d'immersion, les parties contractantes s'efforcent de déterminer s'il existe une base scientifique d'évaluation des conséquences de l'immersion comme indiqué dans cette annexe, en tenant compte également des variations saisonnières.

3. CONSIDÉRATIONS ET CIRCONSTANCES GÉNÉRALES

(1) Effets éventuels sur les zones d'agrément (tels que présence de matériaux flottants ou échoués, turbidité, odeurs désagréables, décoloration, écume).

(2) Effets éventuels sur la faune et la flore marines, la pisciculture et la conchyliculture, les réserves poissonnières et les pêcheries, la récolte et la culture d'algues.

(3) Effets éventuels sur les autres utilisations de la mer (altération de la qualité de l'eau pour des usages industriels, corrosion sous-marine des ouvrages en mer, perturbations du fonctionnement des navires par les matières flottantes, entraves à la pêche et à la navigation dues au dépôt de déchets ou d'objets solides sur le fond de la mer et protection de zones d'une importance particulière du point de vue scientifique ou de la conservation).

(4) Possibilités pratiques de recourir sur la terre ferme à d'autres méthodes de traitement, de rejet ou d'élimination, ou à des traitements réduisant la nocivité des matières avant leur immersion en mer.

SI/75-122 12 November, 1975

OCEAN DUMPING CONTROL ACT

Proclaimed in Force December 13, 1975

JULES LÉGER
[L.S.]
Canada

ELIZABETH THE SECOND, by the Grace of God of the United Kingdom, Canada and Her other Realms and Territories QUEEN, Head of the Commonwealth, Defender of the Faith.

To All to Whom these Presents shall come or whom the same may in anyway concern,

Greeting:

D. S. THORSON
Deputy Attorney General

A Proclamation

Whereas in and by section 29 of the Ocean Dumping Control Act, assented to on June 19, 1975, being chapter 55 of the Statutes of Canada 1974-75, it is provided that the said Act shall come into force on a day to be fixed by proclamation.

And Whereas it is expedient that the Ocean Dumping Control Act should come into force and have effect upon, from and after the 13th day of December, 1975.

Now Know You that We, by and with the advice of Our Privy Council for Canada, do by this Our Proclamation declare and direct that the Ocean Dumping Control Act shall come into force and have effect upon, from and after the 13th day of December, 1975.

Of All Which Our Loving Subjects and all others whom these Presents may concern are hereby required to take notice and to govern themselves accordingly.

In Testimony Whereof, We have caused these Our Letters to be made Patent and the Great Seal of Canada to be hereunto affixed. Witness: Our Right Trusty and Well-beloved Jules Léger, Chancellor and Principal Companion of Our Order of Canada, Chancellor and Commander of Our Order of Military Merit upon whom We have conferred Our Canadian Forces' Decoration, Governor General and Commander-in-Chief of Canada.

At Our Government House, in Our City of Ottawa, this twenty-first day of October in the year of Our Lord one thousand nine hundred and seventy-five and in the twenty-fourth year of Our Reign.

By Command,

ROBERT J. BERTRAND
Deputy Registrar General of Canada

TR/75-122 12 novembre 1975

LOI SUR L'IMMERSION DE DÉCHETS EN MER

Proclamée en vigueur le 13 décembre 1975

JULES LÉGER
[L.S.]
Canada

ELIZABETH DEUX, par la Grâce de Dieu, REINE du Royaume-Uni, du Canada et de ses autres royaumes et territoires, Chef du Commonwealth, Défenseur de la Foi.

A tous ceux à qui les présentes parviendront ou qu'icelles pourront de quelque manière concerner,

Salut:

Le sous-procureur général,
D.S. THORSON

Proclamation

Vu l'article 29 de la Loi sur l'immersion de déchets en mer, sanctionnée le 19 juin 1975, chapitre 55 des Statuts du Canada de 1974-1975, lequel article stipule que ladite loi entrera en vigueur à la date qui sera fixée par proclamation;

Et vu qu'il est opportun que ladite loi entre en vigueur et devienne exécutoire à compter du 13 décembre 1975:

Sachez donc maintenant que, sur et avec l'avis de Notre Conseil privé pour le Canada, nous déclarons et décrétons en vertu de Notre présente proclamation que la Loi sur l'immersion de déchets en mer entrera en vigueur et deviendra exécutoire le 13 décembre 1975.

De ce qui précède, Nos féaux sujets et tous ceux que les présentes peuvent concerner sont par les présentes requis de prendre connaissance et d'agir en conséquence.

En foi de quoi, Nous avons fait émettre Nos présentes Lettres Patentes et à icelles fait apposer le Grand Sceau du Canada. Témoin: Notre très fidèle et bien-aimé Jules Léger, Chancelier et Compagnon principal de Notre Ordre du Canada, Chancelier et Commandeur de Notre Ordre du Mérite militaire, à qui Nous avons décerné Notre Décoration des Forces canadiennes, Gouverneur général et Commandant en chef du Canada.

A Notre Hôtel du Gouvernement, en Notre ville d'Ottawa, ce vingt et unième jour d'octobre en l'an de grâce mil neuf cent soixante-quinze, le vingt-quatrième de Notre Règne.

Par ordre,

Le sous-registraire général du Canada,
ROBERT J. BERTRAND

Environment Canada Environnement Canada

OCEAN DUMPING CONTROL REGULATIONS

made under the

OCEAN DUMPING CONTROL
ACT

Regulations established by

P.C. 1975-2315

RÈGLEMENT SUR L'IMMERSION DE DÉCHETS EN MER

en vertu de la

LOI SUR L'IMMERSION
DE DÉCHETS EN MER

Règlement établi par

C.P. 1975-2315

Published under the authority of the Deputy Minister/Publication autorisée par le Sous-ministre

Amendment List November 17, 1975

Liste de modification 17 novembre 1975

REGULATIONS RESPECTING THE CONTROL OF OCEAN DUMPING

Short Title

1. These Regulations may be cited as the *Ocean Dumping Control Regulations.*

Interpretation

2. In these Regulations,

"Act" means the *Ocean Dumping Control Act;*

"carrier" means the ship, aircraft or other structure used to transport the matter to be dumped or disposed of to the dumping or disposal site;

"Minister" means the Minister of the Environment.

Applications for Permits

3. (1) Subject to subsections (2) to (5), an application for a permit to load a substance for dumping at sea or to dump a substance at sea, or both, shall be in Form 1.

(2) An application for a permit to load dredged material for dumping at sea or to dump dredged material at sea, or both, shall be in Form 2.

(3) An application for a permit to

(*a*) load a substance for incineration or thermal degradation at sea, or

(*b*) carry out the incineration or thermal degradation of a substance at sea

or both, shall be in Form 3.

(4) An application for a permit to dispose of a ship, aircraft, platform or other man-made structure at sea shall be in Form 4.

(5) An application for a permit to dispose of a substance at sea by placing it on ice shall be in Form 5.

(6) Where an application for a permit is made

RÈGLEMENT RELATIF AU CONTRÔLE DE L'IMMERSION EN MER

Titre abrégé

1. Le présent règlement peut être cité sous le titre: *Règlement sur l'immersion de déchets en mer.*

Interprétation

2. Dans le présent règlement,

«Loi» désigne la *Loi sur l'immersion de déchets en mer;*

«Ministre» désigne le ministre de l'Environnement;

«transporteur» désigne le navire, aéronef ou tout autre ouvrage utilisé pour transporter les matières à immerger, à rejeter ou à abandonner au lieu d'immersion, de rejet ou d'abandon.

Demandes de permis

3. (1) Sous réserve des paragraphes (2) à (5), une demande de permis de charger une substance à immerger ou de l'immerger dans la mer, ou des deux, doit être présentée sur la formule 1.

(2) Une demande de permis de charger des matières de dragage à immerger ou de les immerger dans la mer, ou des deux, doit être présentée sur la formule 2.

(3) Une demande de permis

a) de charger une substance destinée à l'incinération ou à la dégradation thermique en mer, ou

b) d'effectuer l'incinération ou la dégradation thermique d'une substance en mer,

ou les deux, doit être présentée sur la formule 3.

(4) Une demande de permis d'abandonner en mer un navire, un aéronef, une plate-forme ou tout autre ouvrage doit être présentée sur la formule 4.

(5) Une demande de permis de rejeter une substance en mer en l'abandonnant sur les glaces doit être présentée sur la formule 5.

(6) Lorsqu'une demande de permis est présentée

(*a*) in Canada, it may be submitted to the regional office of the Environmental Protection Service, Department of the Environment, located in Vancouver, Edmonton or Halifax; or

(*b*) outside Canada, it may be submitted to the Director, Environmental Contaminants Control Branch, Environmental Protection Service, Department of the Environment, Ottawa, K1A 0H3.

Reports Under Subsection 8(4) of Act

4. (1) A report required by subsection 8(4) of the Act may be made to the Director of the regional office of the Environmental Protection Service, Department of the Environment, located in Vancouver, Edmonton or Halifax and shall contain the following information:

(*a*) where the dumping involves a ship,

(i) the name of the ship and its master and the name and address of its owner, and

(ii) the port of registry, official number, overall length, extreme breadth and deadweight tonnage of the ship,

(*b*) where the dumping involves an aircraft,

(i) the name of the pilot-in-command and the name and address of its owner, and

(ii) the type, model, serial number, nationality and registration marks of the aircraft and its maximum gross weight as authorized by its certificate of air worthiness;

(*c*) the last point of departure and the immediate destination of the ship or aircraft at the time at which the dumping occurred;

(*d*) the geographic coordinates of the dump site;

(*e*) an extract of all relevant portions of the logs and manifests of the ship or aircraft;

(*f*) a description of the circumstances under which the substance was dumped; and

(*g*) a description of the substance dumped including

(i) an adequate identification of the composition and nature of the substance,

(ii) the quantity dumped,

(iii) whether the substance was solid, liquid or gaseous and whether it was packaged or containerized,

(iv) the trade name of the substance, where applicable, and

(v) an estimate, where applicable, of the time required for the substance to sink.

Maximum Quantities and Concentrations Prescribed

5. For the purposes of paragraph 9(5)(*b*) of the Act, the maximum quantity or concentration of a substance specified in Schedule I to the Act that may be contained in another substance is

(*a*) for organohalogen compounds, that quantity not exceeding 0.01 parts of a concentration shown to be toxic to marine, animal and plant sensitive organisms in a bioassay sample and test carried out in accordance with procedures established or approved by the Minister;

a) au Canada, elle peut être envoyée au bureau régional du Service de la protection de l'environnement, Ministère de l'Environnement à Vancouver, Edmonton ou Halifax; ou

b) à l'extérieur du Canada, elle peut être envoyée au directeur des Contaminants de l'environnement, Service de la protection de l'environnement, Ministère de l'Environnement, Ottawa, K1A 0H3.

Rapports en vertu du paragraphe 8(4) de la Loi

4. (1) Un rapport exigé en vertu du paragraphe 8(4) de la Loi peut être présenté au directeur du bureau régional du Service de la protection de l'environnement, Ministère de l'Environnement à Vancouver, Edmonton ou Halifax et doit comprendre les renseignements suivants:

a) lorsque l'immersion se fait par navire,

(i) le nom du navire et de son capitaine et le nom et l'adresse de son propriétaire, et

(ii) le port d'enregistrement, le numéro officiel, la longueur totale, la largeur au fort et le tonnage réel du navire;

b) lorsque l'immersion se fait par aéronef,

(i) le nom du pilote commandant de bord et le nom et l'adresse de son propriétaire, et

(ii) le type, le modèle, le numéro de série, la nationalité et les marques d'immatriculation de l'aéronef et le poids brut maximum autorisé par le certificat de navigabilité;

c) le dernier point de départ et la destination immédiate du navire ou de l'aéronef au moment où l'immersion a eu lieu;

d) les coordonnées géographiques du lieu d'immersion;

e) un extrait de toutes les parties pertinentes du journal de bord et du manifeste du navire ou de l'aéronef;

f) une description des circonstances dans lesquelles la substance a été immergée; et

g) une description de la substance immergée comprenant

(i) une identification adéquate de la composition et de la nature de la substance,

(ii) la quantité immergée,

(iii) la forme de la substance (solide, liquide ou gazeuse) et la méthode d'emballage (emballage ou container),

(iv) la marque de commerce de la substance, s'il y a lieu, et

(v) le temps approximatif que la substance a pris à s'enfoncer s'il y a lieu.

Quantités et concentrations maximales prescrites

5. Aux fins de l'alinéa 9(5)*b*) de la Loi, la quantité ou concentration maximale d'une substance mentionnée à l'annexe I de la Loi qui peut être contenue dans une autre substance est

a) pour les composés organohalogénés, la quantité qui ne dépasse pas 0.01 partie d'une concentration qui s'est révélée toxique pour les organismes marins, animaux et végétaux sensibles dans un échantillon de bio-essai au cours d'un essai effectué selon les méthodes établies ou approuvées par le Ministre;

(*b*) for mercury and mercury compounds in a solid phase of a waste, 0.75 milligrams per kilogram, and in the liquid phase of a waste, 1.5 milligrams per kilogram;

(*c*) for cadmium and cadmium compounds in a solid phase of a waste, 0.6 milligrams per kilogram and in the liquid phase of a waste, 3.0 milligrams per kilogram;

(*d*) for persistent plastics and other persistent synthetic materials, four per cent by volume, in a suitably comminuted form; and

(*e*) for crude oil, fuel oil, heavy diesel oil and lubricating oils, hydraulic fluids and any mixtures containing any of them, any quantity that yields more than 10.0 milligrams per kilogram of n-hexane soluble substances.

6. For the purposes of item 6 of Schedule I to the Act, "high level radioactive wastes or other high level radioactive matter" means any substance with a concentration in curies per unit gross mass (in megagrams) exceeding

(*a*) 10 Ci/t for α active waste of half life greater than 50 years;

(*b*) 10^3 Ci/t for β/γ-active waste, excluding tritium; and

(*c*) 10^6 Ci/t for tritium.

Certificate re Dumping or Disposing of Radioactive Matter

7. An application to dump or dispose of radioactive matter shall be accompanied by documents certifying the concurrence of the Atomic Energy Control Board in such dumping or disposal.

Fees Prescribed

8. (1) Subject to subsections (2) and (3), an application shall be accompanied by a fee of fifty dollars for each instance of dumping or disposal described therein, but the maximum fee required in respect of an application shall not exceed one thousand dollars.

(2) Where the quantity or concentration of a substance specified in Schedule I to the Act that is contained in the substance described in an application exceeds the maximum quantity or concentration prescribed by section 5, the application shall be accompanied by a fee of one thousand dollars.

(3) No fee is required in respect of an application made by Her Majesty in right of Canada or a province.

b) pour le mercure et ses composés dans les déchets solides, 0.75 milligramme au kilogramme et, dans les déchets liquides, 1.5 milligramme au kilogramme;

c) pour la cadmium et ses composés dans les déchets solides, 0.6 milligramme au kilogramme et dans les déchets liquides, 3.0 milligrammes au kilogramme;

d) pour les plastiques indestructibles et autres matières synthétiques indestructibles, quatre pour cent par volume, sous une forme convenablement pulvérisée, et

e) pour le pétrole brut, le mazout, l'huile diesel lourde, les huiles de graissage, les fluides hydrauliques ainsi que les mélanges contenant ces produits, toute quantité qui libère plus de 10 milligrammes au kilogramme de substances solubles de n-hexane.

6. Aux fins de l'article 6 de l'annexe I de la Loi, «déchets fortement radioactifs ou autres substances fortement radioactives» désigne toute substance possédant une concentration en curies par unité de masse brute (en tonnes) dépassant:

a) 10 Ci/t pour un déchet radioactif (alpha) d'une période demi-vie supérieure à 50 ans;

b) 10^3 Ci/t pour un déchet radioactif (Bêta/gamma), à l'exclusion du tritium; et

c) 10^6 Ci/t pour le tritium.

Certificat relatif à l'immersion, au rejet ou à l'abandon de matières radioactives

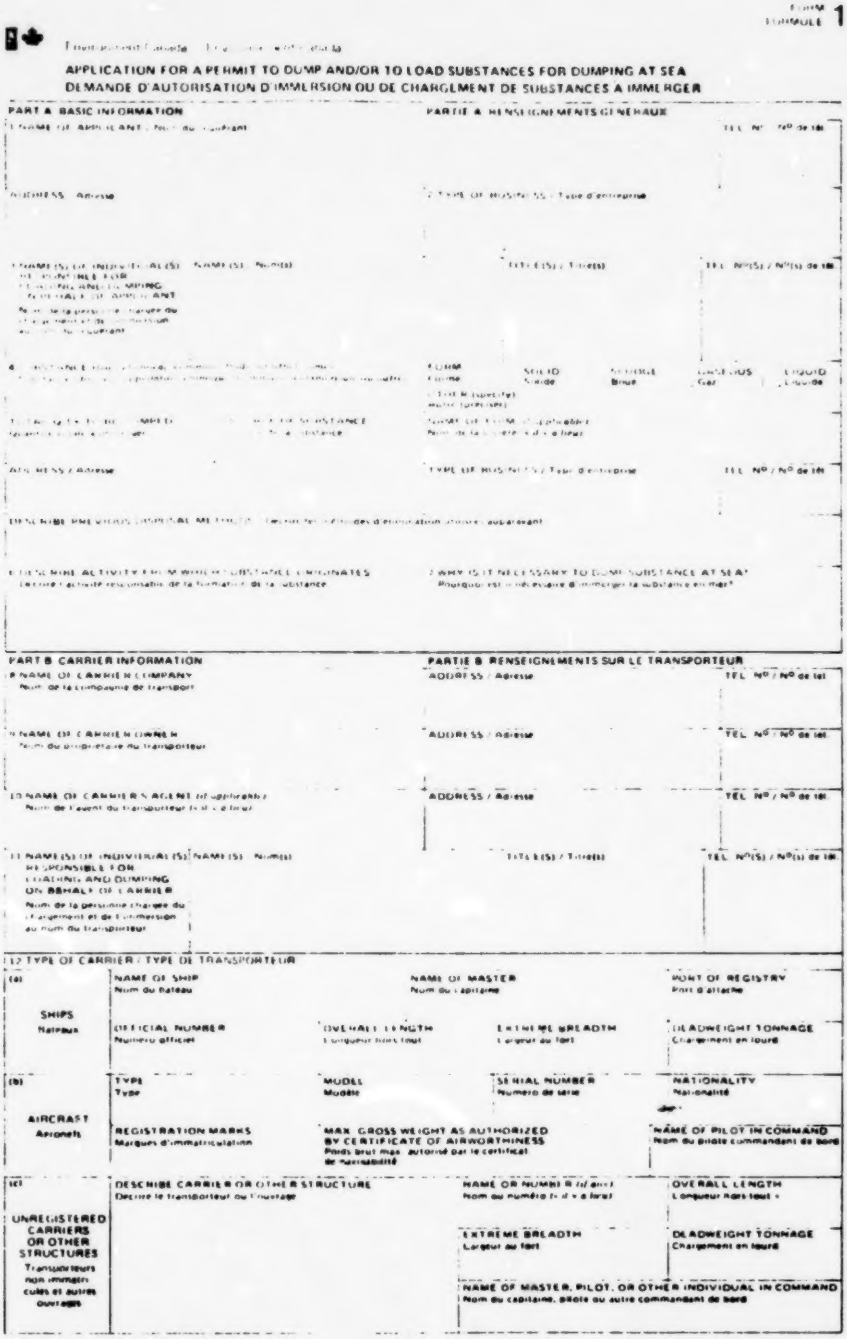
7. Une demande d'immersion, de rejet ou d'abandon de matières radioactives doit être accompagnée de documents attestant la participation de la Commission de contrôle de l'énergie atomique à une telle immersion, un tel rejet ou un tel abandon.

Droits prescrits

8. (1) Sous réserve des paragraphes (2) et (3), une demande doit être accompagnée d'un droit de cinquante dollars pour chaque opération d'immersion, de rejet ou d'abandon qui y est mentionnée, mais le droit requis pour une demande ne pourra pas excéder mille dollars.

(2) Lorsque la quantité ou concentration d'une substance mentionnée à l'annexe I de la Loi contenue dans la substance décrite dans une demande dépasse la quantité ou concentration maximale prescrite à l'article 5, la demande doit être accompagnée d'un droit de mille dollars.

(3) Aucun droit n'est requis pour une demande faite par Sa Majesté du chef du Canada ou d'une province.



FORM
FORMULE 1

Environment Canada   Environnement Canada

APPLICATION FOR A PERMIT TO DUMP AND/OR TO LOAD SUBSTANCES FOR DUMPING AT SEA
DEMANDE D'AUTORISATION D'IMMERSION OU DE CHARGEMENT DE SUBSTANCES A IMMERGER

PART A BASIC INFORMATION — **PARTIE A RENSEIGNEMENTS GENERAUX**

1 NAME OF APPLICANT / Nom du requérant — TEL. Nº / Nº de tél.

ADDRESS / Adresse — 2 TYPE OF BUSINESS / Type d'entreprise

3 NAME(S) OF INDIVIDUAL(S) RESPONSIBLE FOR LOADING AND DUMPING ON BEHALF OF APPLICANT / Nom de la personne chargée du chargement et de l'immersion au nom du requérant — NAME(S) / Nom(s) — TITLE(S) / Titre(s) — TEL. Nº(S) / Nº(s) de tél.

4 SUBSTANCE [illegible] — FORM / Forme: SOLID / Solide — SLUDGE / Boue — GASEOUS / Gaz — LIQUID / Liquide — OTHER (specify) / Autre (préciser)

5 TOTAL QUANTITY TO BE DUMPED / Quantité totale à immerger — SOURCE OF SUBSTANCE / Source de la substance — NAME OF FIRM (if applicable) / Nom de la société (s'il y a lieu)

ADDRESS / Adresse — TYPE OF BUSINESS / Type d'entreprise — TEL. Nº / Nº de tél.

DESCRIBE PREVIOUS DISPOSAL METHODS / Décrire les méthodes d'élimination utilisées auparavant

6 DESCRIBE ACTIVITY FROM WHICH SUBSTANCE ORIGINATES / Décrire l'activité responsable de la formation de la substance — 7 WHY IS IT NECESSARY TO DUMP SUBSTANCE AT SEA? / Pourquoi est-il nécessaire d'immerger la substance en mer?

PART B CARRIER INFORMATION — **PARTIE B RENSEIGNEMENTS SUR LE TRANSPORTEUR**

8 NAME OF CARRIER COMPANY / Nom de la compagnie de transport — ADDRESS / Adresse — TEL. Nº / Nº de tél.

9 NAME OF CARRIER OWNER / Nom du propriétaire du transporteur — ADDRESS / Adresse — TEL. Nº / Nº de tél.

10 NAME OF CARRIER'S AGENT (if applicable) / Nom de l'agent du transporteur (s'il y a lieu) — ADDRESS / Adresse — TEL. Nº / Nº de tél.

11 NAME(S) OF INDIVIDUAL(S) RESPONSIBLE FOR LOADING AND DUMPING ON BEHALF OF CARRIER / Nom de la personne chargée du chargement et de l'immersion au nom du transporteur — NAME(S) / Nom(s) — TITLE(S) / Titre(s) — TEL. Nº(S) / Nº(s) de tél.

12 TYPE OF CARRIER / TYPE DE TRANSPORTEUR

(a) SHIPS Bateaux	NAME OF SHIP Nom du bateau		NAME OF MASTER Nom du capitaine	PORT OF REGISTRY Port d'attache
	OFFICIAL NUMBER Numéro officiel	OVERALL LENGTH Longueur hors tout	EXTREME BREADTH Largeur au fort	DEADWEIGHT TONNAGE Chargement en lourd
(b) AIRCRAFT Aéronefs	TYPE Type	MODEL Modèle	SERIAL NUMBER Numéro de série	NATIONALITY Nationalité
	REGISTRATION MARKS Marques d'immatriculation	MAX. GROSS WEIGHT AS AUTHORIZED BY CERTIFICATE OF AIRWORTHINESS Poids brut max. autorisé par le certificat de navigabilité		NAME OF PILOT IN COMMAND Nom du pilote commandant de bord
(c) UNREGISTERED CARRIERS OR OTHER STRUCTURES Transporteurs non immatriculés et autres ouvrages	DESCRIBE CARRIER OR OTHER STRUCTURE Décrire le transporteur ou l'ouvrage		NAME OR NUMBER (if any) Nom ou numéro (s'il y a lieu)	OVERALL LENGTH Longueur hors tout
			EXTREME BREADTH Largeur au fort	DEADWEIGHT TONNAGE Chargement en lourd
			NAME OF MASTER, PILOT, OR OTHER INDIVIDUAL IN COMMAND Nom du capitaine, pilote ou autre commandant de bord	

PART C DUMPING INFORMATION **PARTIE C RENSEIGNEMENTS SUR L'IMMERSION**

13 PORT OF DEPARTURE Port de départ	14 PROPOSED LOADING DATE(S) Date(s) proposée(s) pour le chargement FROM / de TO / À	15 METHOD OF LOADING AND STOWAGE PROPOSED Méthode proposée de chargement et d'arrimage
16 PROPOSED DATE(S) OF DUMPING Date(s) proposée(s) de l'immersion	QUANTITY PER DUMPING Quantité immergée par opération	

17 WHERE 16 DOES NOT APPLY STATE Si 16 ne s'applique pas, indiquer	REQUIRED DURATION OF PERMIT Durée nécessaire de l'autorisation FROM / de TO / À	TOTAL QUANTITY Quantité totale	FREQUENCY AND RATE OF DUMPING Fréquence et cadence des opérations

18 DESCRIBE ROUTE FROM LOADING SITE TO DUMP SITE / Décrire le trajet du point de chargement au lieu d'immersion

19 METHOD OF DISPOSAL / MÉTHODE D'ÉLIMINATION

(a) FORM OF PACKAGING OR CONTAINERIZATION Méthode d'emballage et de conditionnement	(b) SPEED OF CARRIER DURING DISCHARGE Vitesse du transporteur au cours du déchargement	(c) DISCHARGE RATE Cadence de déchargement
(d) DEPTH OF DISCHARGE (Below sea surface or altitude above sea surface if applicable) Profondeur du déchargement (sous le niveau de la mer ou altitude au-dessus du niveau de la mer s'il y a lieu)	(e) DESCRIBE CARRIER TRACK WHILE DUMPING Décrire le trajet du transporteur au cours de l'immersion	

PART D DUMP SITE INFORMATION **PARTIE D RENSEIGNEMENTS SUR LE LIEU D'IMMERSION**

20 GEOGRAPHICAL COORDINATES OF DUMPSITE Coordonnées géographiques du lieu d'immersion	LAT	LONG	21 DEPTH OF SEA AT PROPOSED DUMPSITE Profondeur de la mer au lieu d'immersion

22 REASON FOR SELECTION OF PROPOSED SITE / Raisons du choix du lieu proposé

PARTIE E PROPERTIES OF SUBSTANCES TO BE DUMPED **PARTIE E PROPRIETES DE LA SUBSTANCE A IMMERGER**

NOTE In carrying out any necessary tests the analyst should follow documented procedures and be prepared to describe these procedures in detail

NOTE Pour effectuer les essais nécessaires, l'analyste doit suivre les méthodes indiquées et être prêt à les décrire en détail

23 PHYSICAL PROPERTIES / PROPRIETES PHYSIQUES

(a) LIQUIDS Liquides	SPECIFIC GRAVITY Poids spécifique	VAPOUR PRESSURE Tension de vapeur	MISCIBILITY WITH SEAWATER Miscibilité avec l'eau de la mer	VISCOSITY Viscosité	ODOUR Odeur	COLOUR Couleur
(b) SOLIDS SOLUBLE IN WATER Solides solubles dans l'eau	SPECIFIC GRAVITY Poids spécifique	SOLUBILITY IN SEAWATER Solubilité dans l'eau de mer		ODOUR Odeur		COLOUR Couleur
(c) SOLIDS INSOLUBLE IN WATER Solides insolubles dans l'eau	PARTICLE SIZE DISTRIBUTION AND SETTLING RATE IN SEAWATER Grosseur des particules et taux de sédimentation dans l'eau de mer			ODOUR Odeur		COLOUR Couleur

24 CHEMICAL AND BIOCHEMICAL PROPERTIES / PROPRIÉTÉS CHIMIQUES ET BIOCHIMIQUES

(a) ARE SUBSTANCES NAMED IN SCHEDULES I AND II OF THE ACT PRESENT?
Y a-t-il des substances mentionnées aux annexes I et II de la Loi

☐ YES Oui ☐ NO Non

IF YES, IN WHAT CONCENTRATIONS
Si oui, dans quelles concentrations

(b) CHEMICAL STABILITY Stabilité chimique	OXIDATION REDUCTION POTENTIAL Potentiel d'oxydoréduction	CHEMICAL OXYGEN DEMAND Demande chimique d'oxygène
	REACTIVITY WITH SEAWATER Réactivité avec l'eau de mer	CHANGE ON EXPOSURE TO ATMOSPHERE AND SUNLIGHT Changement au contact de l'atmosphère et de la lumière du soleil

(c) **BIOCHEMICAL BEHAVIOR** Comportement biochimique	BIOCHEMICAL OXYGEN DEMAND AT 20° Demande biochimique d'oxygène à 20°	BIOTRANSFORMATION Biotransformation
	SOLUBILITY IN ANIMAL OR PLANT LIPIDS Solubilité dans les lipides animaux et végétaux	IF SUBSTANCE IS A PESTICIDE, GIVE PCP REGISTRATION NO. OR COMMON NAME S'il s'agit d'un pesticide, donner le numéro d'enregistrement des produits antiparasitaires ou le nom commun

25 BIOACCUMULATION BY MARINE ORGANISMS / BIO ACCUMULATION PAR LES ORGANISMES MARINS

(a) CONCENTRATION FACTOR FOR FISH, MACROINVERTEBRATES AND PLANKTON
Facteur de concentration pour le poisson, les macro invertébrés et le plancton

(b) RATE OF UPTAKE AND RETENTION (biological half life)
Taux d'ingestion et de rétention (demi-vie biologique)

(c) TAINTING, COLOUR CHANGE AND OTHER UNDESIRABLE CONTAMINANT EFFECTS ON SEAFOOD
Coloration, changement de couleur et autres effets de contamination indésirables sur les fruits de mer

26 TOXICITY TO MARINE ORGANISMS (96 hour LC_{50} in mg/l)
Toxicité pour les organismes marins (CL_{50} après 96 heures en mg/l)

27 DESCRIBE HAZARD TO HUMAN HEALTH BY / Décrire les dangers pour la santé humaine par

(a) ORAL INTAKE (LD_{50} in mg/kg)
Ingestion orale (DL_{50} en mg/kg)

(b) SKIN CONTACT
Contact avec la peau

(c) INHALATION / Inhalation

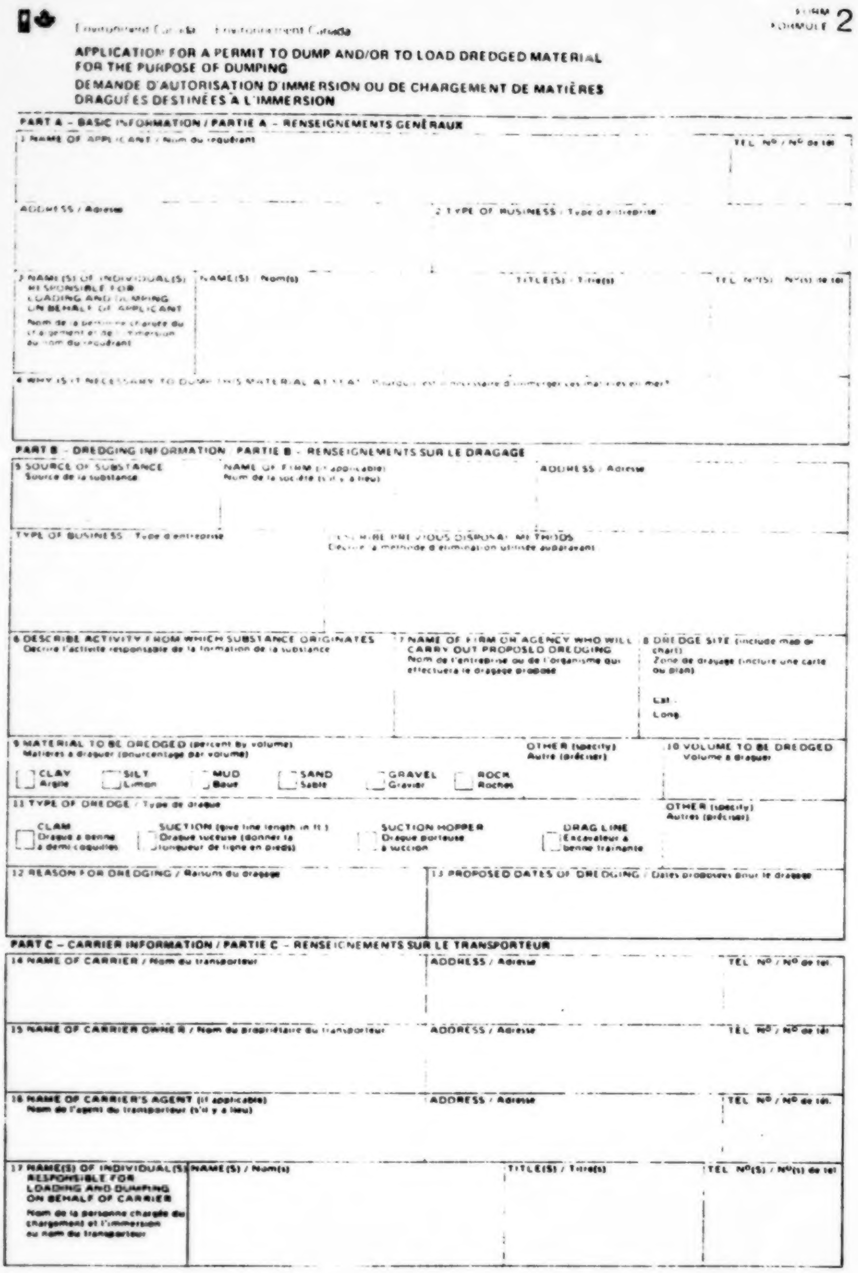
When the applicant is a corporation, give the title or capacity and telephone number of the person signing this application.
Si le requérant est une société, donner le titre ou la fonction et le numéro de téléphone du signataire de la demande.

DATE ....

SIGNATURE OF APPLICANT / Signature du requérant ....

TITLE / Titre ....

TEL. NO. / Nº de tél. ....



Environment Canada   Environnement Canada

FORM
FORMULE 2

APPLICATION FOR A PERMIT TO DUMP AND/OR TO LOAD DREDGED MATERIAL FOR THE PURPOSE OF DUMPING

DEMANDE D'AUTORISATION D'IMMERSION OU DE CHARGEMENT DE MATIÈRES DRAGUÉES DESTINÉES À L'IMMERSION

PART A – BASIC INFORMATION / PARTIE A – RENSEIGNEMENTS GÉNÉRAUX

1 NAME OF APPLICANT / Nom du requérant	TEL. Nº / Nº de tél.
ADDRESS / Adresse	2 TYPE OF BUSINESS / Type d'entreprise

3 NAME(S) OF INDIVIDUAL(S) RESPONSIBLE FOR LOADING AND DUMPING ON BEHALF OF APPLICANT Nom de la personne chargée du chargement et de l'immersion au nom du requérant	NAME(S) / Nom(s)	TITLE(S) / Titre(s)	TEL. Nº(S) / Nº(s) de tél.

4 WHY IS IT NECESSARY TO DUMP THIS MATERIAL AT SEA? / Pourquoi est-il nécessaire d'immerger ces matières en mer?

PART B – DREDGING INFORMATION / PARTIE B – RENSEIGNEMENTS SUR LE DRAGAGE

5 SOURCE OF SUBSTANCE Source de la substance	NAME OF FIRM (if applicable) Nom de la société (s'il y a lieu)	ADDRESS / Adresse

TYPE OF BUSINESS / Type d'entreprise	DESCRIBE PREVIOUS DISPOSAL METHODS Décrire la méthode d'élimination utilisée auparavant

6 DESCRIBE ACTIVITY FROM WHICH SUBSTANCE ORIGINATES Décrire l'activité responsable de la formation de la substance	7 NAME OF FIRM OR AGENCY WHO WILL CARRY OUT PROPOSED DREDGING Nom de l'entreprise ou de l'organisme qui effectuera le dragage proposé	8 DREDGE SITE (include map or chart) Zone de dragage (inclure une carte ou plan) Lat. Long.

9 MATERIAL TO BE DREDGED (percent by volume)
Matières à draguer (pourcentage par volume)

☐ CLAY Argile   ☐ SILT Limon   ☐ MUD Boue   ☐ SAND Sable   ☐ GRAVEL Gravier   ☐ ROCK Roches

OTHER (specify)
Autre (préciser)

10 VOLUME TO BE DREDGED
Volume à draguer

11 TYPE OF DREDGE / Type de drague

☐ CLAM Drague à benne à demi-coquilles   ☐ SUCTION (give line length in ft.) Drague suceuse (donner la longueur de ligne en pieds)   ☐ SUCTION HOPPER Drague porteuse à succion   ☐ DRAG LINE Excavateur à benne traînante

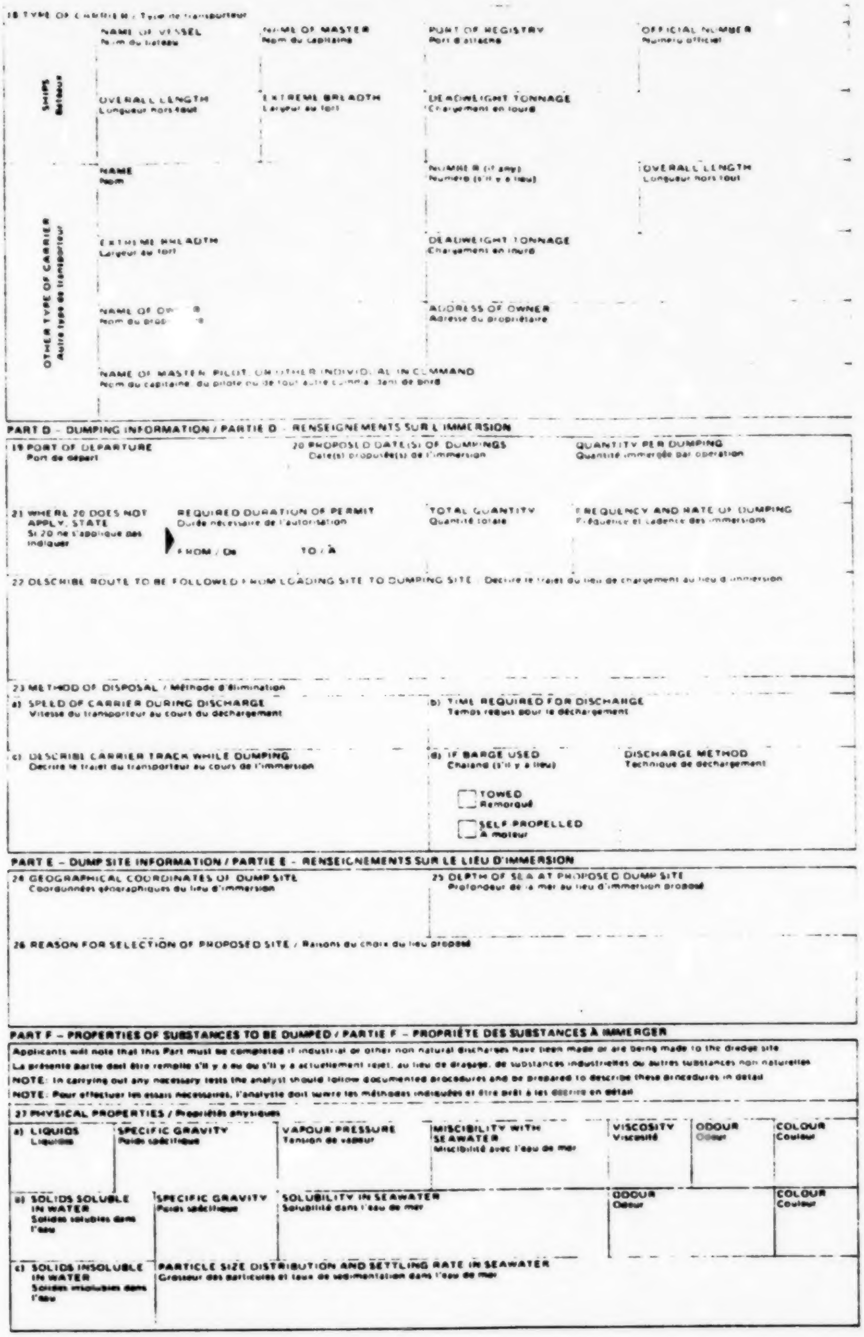
OTHER (specify)
Autres (préciser)

12 REASON FOR DREDGING / Raisons du dragage	13 PROPOSED DATES OF DREDGING / Dates proposées pour le dragage

PART C – CARRIER INFORMATION / PARTIE C – RENSEIGNEMENTS SUR LE TRANSPORTEUR

14 NAME OF CARRIER / Nom du transporteur	ADDRESS / Adresse	TEL. Nº / Nº de tél.
15 NAME OF CARRIER OWNER / Nom du propriétaire du transporteur	ADDRESS / Adresse	TEL. Nº / Nº de tél.
16 NAME OF CARRIER'S AGENT (if applicable) Nom de l'agent du transporteur (s'il y a lieu)	ADDRESS / Adresse	TEL. Nº / Nº de tél.

17 NAME(S) OF INDIVIDUAL(S) RESPONSIBLE FOR LOADING AND DUMPING ON BEHALF OF CARRIER Nom de la personne chargée du chargement et l'immersion au nom du transporteur	NAME(S) / Nom(s)	TITLE(S) / Titre(s)	TEL. Nº(S) / Nº(s) de tél.



18 TYPE OF CARRIER / Type de transporteur

SHIPS / Bateaux

NAME OF VESSEL Nom du bateau	NAME OF MASTER Nom du capitaine	PORT OF REGISTRY Port d'attache	OFFICIAL NUMBER Numéro officiel
OVERALL LENGTH Longueur hors-tout	EXTREME BREADTH Largeur au fort	DEADWEIGHT TONNAGE Chargement en lourd	

OTHER TYPE OF CARRIER / Autre type de transporteur

NAME Nom	NUMBER (if any) Numéro (s'il y a lieu)	OVERALL LENGTH Longueur hors-tout
EXTREME BREADTH Largeur au fort	DEADWEIGHT TONNAGE Chargement en lourd	
NAME OF OWNER Nom du propriétaire	ADDRESS OF OWNER Adresse du propriétaire	
NAME OF MASTER, PILOT, OR OTHER INDIVIDUAL IN COMMAND Nom du capitaine, du pilote ou de tout autre commandant de bord		

PART D – DUMPING INFORMATION / PARTIE D – RENSEIGNEMENTS SUR L'IMMERSION

19 PORT OF DEPARTURE Port de départ	20 PROPOSED DATE(S) OF DUMPINGS Date(s) proposée(s) de l'immersion		QUANTITY PER DUMPING Quantité immergée par opération
21 WHERE 20 DOES NOT APPLY, STATE Si 20 ne s'applique pas indiquer	REQUIRED DURATION OF PERMIT Durée nécessaire de l'autorisation FROM / De TO / À	TOTAL QUANTITY Quantité totale	FREQUENCY AND RATE OF DUMPING Fréquence et cadence des immersions

22 DESCRIBE ROUTE TO BE FOLLOWED FROM LOADING SITE TO DUMPING SITE / Décrire le trajet du lieu de chargement au lieu d'immersion

23 METHOD OF DISPOSAL / Méthode d'élimination

a) SPEED OF CARRIER DURING DISCHARGE Vitesse du transporteur au cours du déchargement	b) TIME REQUIRED FOR DISCHARGE Temps requis pour le déchargement	
c) DESCRIBE CARRIER TRACK WHILE DUMPING Décrire le trajet du transporteur au cours de l'immersion	d) IF BARGE USED Chaland (s'il y a lieu) ☐ TOWED Remorqué ☐ SELF PROPELLED À moteur	DISCHARGE METHOD Technique de déchargement

PART E – DUMP SITE INFORMATION / PARTIE E – RENSEIGNEMENTS SUR LE LIEU D'IMMERSION

24 GEOGRAPHICAL COORDINATES OF DUMP SITE Coordonnées géographiques du lieu d'immersion	25 DEPTH OF SEA AT PROPOSED DUMP SITE Profondeur de la mer au lieu d'immersion proposé

26 REASON FOR SELECTION OF PROPOSED SITE / Raisons du choix du lieu proposé

PART F – PROPERTIES OF SUBSTANCES TO BE DUMPED / PARTIE F – PROPRIÉTÉ DES SUBSTANCES À IMMERGER

Applicants will note that this Part must be completed if industrial or other non natural discharges have been made or are being made to the dredge site

La présente partie doit être remplie s'il y a eu ou s'il y a actuellement rejet, au lieu de dragage, de substances industrielles ou autres substances non naturelles

NOTE: In carrying out any necessary tests the analyst should follow documented procedures and be prepared to describe these procedures in detail

NOTE: Pour effectuer les essais nécessaires, l'analyste doit suivre les méthodes indiquées et être prêt à les décrire en détail

27 PHYSICAL PROPERTIES / Propriétés physiques

a) LIQUIDS Liquides	SPECIFIC GRAVITY Poids spécifique	VAPOUR PRESSURE Tension de vapeur	MISCIBILITY WITH SEAWATER Miscibilité avec l'eau de mer	VISCOSITY Viscosité	ODOUR Odeur	COLOUR Couleur
b) SOLIDS SOLUBLE IN WATER Solides solubles dans l'eau	SPECIFIC GRAVITY Poids spécifique	SOLUBILITY IN SEAWATER Solubilité dans l'eau de mer		ODOUR Odeur		COLOUR Couleur
c) SOLIDS INSOLUBLE IN WATER Solides insolubles dans l'eau	PARTICLE SIZE DISTRIBUTION AND SETTLING RATE IN SEAWATER Grosseur des particules et taux de sédimentation dans l'eau de mer					

1) CHEMICAL AND BIOCHEMICAL PROPERTIES / Propriétés chimiques et biochimiques

(a) ARE SUBSTANCES NAMED IN SCHEDULE I AND II OF THE ACT PRESENT? ☐ YES ☐ NO
Y a-t-il des substances mentionnées aux annexes I et II de la loi? Oui Non

IF YES, IN WHAT CONCENTRATIONS
Si oui, dans quelles concentrations

b) CHEMICAL STABILITY
Stabilité Chimique

OXIDATION REDUCTION POTENTIAL
Potentiel d'oxydo-réduction

CHEMICAL OXYGEN DEMAND
Demande chimique d'oxygène

REACTIVITY WITH SEAWATER
Réactivité avec l'eau de mer

CHANGE ON EXPOSURE TO ATMOSPHERE AND SUNLIGHT
Changement au contact de l'atmosphère et de la lumière du soleil

c) BIOCHEMICAL BEHAVIOUR
Comportement biochimique

BIOCHEMICAL OXYGEN DEMAND AT 20°
Demande biochimique d'oxygène à 20°

BIOTRANSFORMATION
Biotransformation

SOLUBILITY IN ANIMAL OR PLANT LIPIDS
Solubilité dans les lipides animaux ou végétaux

IF SUBSTANCE IS A PESTICIDE GIVE PCP REGISTRATION NO. OR COMMON NAME
S'il s'agit d'un pesticide, donner le numéro d'enregistrement des produits antiparasitaires ou le nom commun

2) BIOACCUMULATION BY MARINE ORGANISMS / Bioaccumulation par les organismes marins

a) CONCENTRATION FACTOR FOR FISH, MACROINVERTEBRATES AND PLANKTON
Facteurs de concentration pour le poisson, les macro-invertébrés et le plancton

b) RATE OF UPTAKE AND RETENTION (biological half life)
Taux d'ingestion et de rétention (demi-vie biologique)

c) TAINTING, COLOUR CHANGE AND OTHER UNDESIRABLE CONTAMINANT EFFECTS ON SEAFOOD
Contamination, changement de couleur et autres effets de contamination indésirables sur les fruits de mer

d) TOXICITY TO MARINE ORGANISMS (96 Hour LC50 in mg/l)
Toxicité pour les organismes marins (CL50 après 96 heures en mg/l)

3) DESCRIBE HAZARD TO HUMAN HEALTH BY / Décrire les dangers pour la santé humaine par

a) ORAL INTAKE (LD50 in mg/kg)
Ingestion orale (DL50 en mg/kg)

b) SKIN CONTACT
Contact avec la peau

c) INHALATION
Inhalation

When the applicant is a corporation, give the title or capacity and telephone number of the person signing this application

Si le requérant est une société, donner le titre ou la fonction et le numéro de téléphone du signataire de la demande

DATE

SIGNATURE OF APPLICANT / Signature du requérant

TITLE / Titre

TEL. NO. / Nº de tél

89-12

Environment Canada / Environnement Canada

FORM / FORMULE 3

APPLICATION FOR A PERMIT TO CARRY OUT AND/OR TO LOAD SUBSTANCES FOR THE PURPOSE OF CARRYING OUT INCINERATION OR THERMAL DEGRADATION AT SEA

DEMANDE D'AUTORISATION D'INCINÉRATION OU DE COMBUSTION OU DE CHARGEMENT DE SUBSTANCES DESTINÉES À L'INCINÉRATION OU LA COMBUSTION EN MER

PART A – BASIC INFORMATION / PARTIE A – RENSEIGNEMENTS GÉNÉRAUX

1 NAME OF APPLICANT / Nom du requérant

TEL. Nº / Nº de tél.

ADDRESS / Adresse

2 TYPE OF BUSINESS / Type d'entreprise

3 NAME(S) OF INDIVIDUAL(S) RESPONSIBLE FOR LOADING AND INCINERATION ON BEHALF OF APPLICANT / Nom de la personne chargée du chargement et de l'incinération au nom du requérant

NAME(S) / Nom(s)

TITLE(S) / Titre(s)

TEL. Nº(S) / Nº(s) de tél.

4 SUBSTANCE (Give chemical, common, trade or other name) / Substance (donner l'appellation chimique, courante, commerciale ou autre)

FORM / Forme ☐ SOLID / Solide ☐ SLUDGE / Boue ☐ GASEOUS / Gaz ☐ LIQUID / Liquide

OTHER (specify) / Autre (préciser)

TOTAL QUANTITY TO BE INCINERATED / Quantité totale à incinérer

5 SOURCE OF SUBSTANCE / Source de la substance

NAME OF FIRM (if applicable) / Nom de la société (s'il y a lieu)

ADDRESS / Adresse

TYPE OF BUSINESS / Type d'entreprise

TEL. Nº / Nº de tél.

DESCRIBE PREVIOUS DISPOSAL METHODS / Décrire les méthodes d'élimination utilisées auparavant

6 DESCRIBE ACTIVITY FROM WHICH SUBSTANCE ORIGINATES / Décrire l'activité responsable de la formation de la substance

7 WHY IS IT NECESSARY TO DISPOSE OF SUBSTANCE AT SEA BY INCINERATION? / Pourquoi est-il nécessaire d'immerger la substance en mer par incinération?

PART B – CARRIER INFORMATION / PARTIE B – RENSEIGNEMENTS SUR LE TRANSPORTEUR

8 NAME OF CARRIER COMPANY / Nom de la compagnie de transport

ADDRESS / Adresse

TEL. Nº / Nº de tél.

9 NAME OF CARRIER OWNER / Nom du propriétaire du transporteur

ADDRESS / Adresse

TEL. Nº / Nº de tél.

10 NAME OF CARRIER'S AGENT (if applicable) / Nom de l'agent du transporteur (s'il y a lieu)

ADDRESS / Adresse

TEL. Nº / Nº de tél.

11 NAME(S) OF INDIVIDUAL(S) RESPONSIBLE FOR LOADING AND INCINERATION ON BEHALF OF CARRIER / Nom de la personne chargée du chargement et de l'incinération au nom du transporteur

NAME(S) / Nom(s)

TITLE(S) / Titre(s)

TEL. Nº(S) / Nº(s) de tél.

12 TYPE OF CARRIER / Type de transporteur

(a) SHIPS / Bateaux	NAME OF VESSEL / Nom du bateau	NAME OF MASTER / Nom du capitaine	PORT OF REGISTRY / Port d'attache	OFFICIAL NUMBER / Numéro officiel
	OVERALL LENGTH / Longueur hors tout	EXTREME BREADTH / Largeur au fort	DEADWEIGHT TONNAGE / Chargement en lourd	
(b) AIRCRAFT / Aéronefs	TYPE / Type	MODEL / Modèle	SERIAL NUMBER / Numéro de série	NATIONALITY / Nationalité
	REGISTRATION MARKS / Marques d'immatriculation	MAX. GROSS WEIGHT AS AUTHORIZED BY CERTIFICATE OF AIRWORTHINESS / Poids brut max. autorisé par le certificat de navigabilité		NAME OF PILOT IN COMMAND / Nom du pilote commandant de bord
(c) UNREGISTERED CARRIERS OR OTHER STRUCTURES / Transporteurs non immatriculés et autres ouvrages	DESCRIBE CARRIER OR OTHER STRUCTURE / Décrire le transporteur ou l'ouvrage		NAME OR NUMBER (if any) / Nom ou numéro (s'il y a lieu)	OVERALL LENGTH / Longueur hors tout
			EXTREME BREADTH / Largeur au fort	DEADWEIGHT TONNAGE / Chargement en lourd
			NAME OF MASTER, PILOT, OR OTHER INDIVIDUAL IN COMMAND / Nom du capitaine, pilote ou autre commandant de bord	

PART C – DUMPING INFORMATION / PARTIE C – RENSEIGNEMENTS SUR L'IMMERSION

13 PORT OF DEPARTURE
Port de départ

14 PROPOSED LOADING DATE(S)
Dates proposées pour le chargement

15 METHOD OF LOADING AND STOWAGE PROPOSED
Méthode proposée de chargement et d'arrimage

16 PROPOSED DATES OF INCINERATION
Date(s) proposée(s) de l'incinération

QUANTITY PER INCINERATION
Quantité incinérée par opération

17 WHERE 16 DOES NOT APPLY STATE
Si 16 ne s'applique pas, indiquer

REQUIRED DURATION OF PERMIT
Durée nécessaire de l'autorisation

TOTAL QUANTITY
Quantité totale

FREQ. AND DAILY RATE OF INCINERATION
Fréquence et cadence quotidienne de l'incinération

18 DESCRIBE ROUTE FROM LOADING SITE TO DUMP SITE / Décrire le trajet du lieu de chargement au lieu d'immersion

19 METHOD OF DISPOSAL / Méthode d'élimination

SPEED OF CARRIER DURING INCINERATION
Vitesse du transporteur au cours de l'incinération

DESCRIBE CARRIER TRACK DURING INCINERATION
Décrire le trajet du transporteur au cours de l'incinération

DISCHARGE HEIGHT ABOVE SEA SURFACE (discharge depth if applicable)
Altitude du déchargement au dessus du niveau de la mer (profondeur, s'il y a lieu)

PART D – DUMP SITE INFORMATION / PARTIE D – RENSEIGNEMENTS SUR LE LIEU D'IMMERSION

20 GEOGRAPHICAL COORDINATES OF DUMP SITE
Coordonnées géographiques du lieu d'immersion LAT. LONG.

21 DEPTH OF SEA AT PROPOSED DUMP SITE
Profondeur de la mer au lieu d'immersion

22 REASON(S) FOR SELECTION OF PROPOSED SITE / Raisons du choix du lieu proposé

PART E – INCINERATION OR THERMAL DEGRADATION INFORMATION

PARTIE E – RENSEIGNEMENTS SUR L'INCINÉRATION OU LA COMBUSTION

23 PROVIDE THE FOLLOWING

(a) Drawings of incinerator showing all internal dimensions and locations. State specifications of auxiliary equipment

(b) Mass and heat balance calculations for the substance to be incinerated

(c) The latest available stack testing reports for the substance to be incinerated

a) Illustrations de l'incinérateur indiquant toutes les dimensions et les emplacements internes. Donner les caractéristiques de l'équipement auxiliaire

b) Calculs de masse et d'équilibre thermique pour substance à incinérer.

c) Rapports d'évaluation en cheminée les plus récents pour la substance à incinérer

24 METHOD AND RATE OF FEEDING PROPOSED
Méthode et taux d'alimentation proposés

25 DESCRIBE COMBUSTION PRODUCTS AND RATE OF PRODUCTION
Décrire les produits de combustion et leur taux de production

26 DESCRIBE ON BOARD AND ON SITE MONITORING EQUIPMENT / Décrire l'équipement de contrôle à bord et sur le terrain

27 DESCRIBE SAFETY PROCEDURES TO BE USED / Décrire les méthodes de sécurité qui seront appliquées

PART F PROPERTIES / PARTIE F PROPRIÉTÉS

(a) SUBSTANCE TO BE INCINERATED / De la substance à incinérer

(b) COMBUSTION PRODUCTS OF INCINERATION / Des produits de combustion résultant de l'incinération

NOTE In carrying out the following tests the analyst should follow documented procedures and be prepared to describe these procedures in detail.

NOTE Pour effectuer les essais suivants l'analyste doit suivre les méthodes indiquées et être prêt à les décrire en détail.

28 PHYSICAL PROPERTIES / Propriétés physiques

(a) LIQUIDS Liquides	SPECIFIC GRAVITY Poids spécifique	VAPOUR PRESSURE Tension de vapeur	MISCIBILITY WITH SEAWATER Miscibilité avec l'eau de mer	VISCOSITY Viscosité	ODOUR Odeur	COLOUR Couleur
(b) SOLIDS SOLUBLE IN WATER Solides solubles dans l'eau	SPECIFIC GRAVITY Poids spécifique	SOLUBILITY IN SEAWATER Solubilité dans l'eau de mer			ODOUR Odeur	COLOUR Couleur
(c) SOLIDS INSOLUBLE IN WATER Solides insolubles dans l'eau	PARTICLE SIZE DISTRIBUTION AND SETTLING RATE IN SEAWATER Grosseur particules et taux de sédimentation dans l'eau de mer				ODOUR Odeur	COLOUR Couleur

29 CHEMICAL AND BIOCHEMICAL PROPERTIES / Propriétés chimiques et biochimiques

(a) ARE SUBSTANCES NAMED IN SCHEDULES I AND II OF THE ACT PRESENT? ☐ YES Oui ☐ NO Non
Y a-t-il des substances mentionnées aux annexes I et II de la Loi?

IF YES, IN WHAT CONCENTRATIONS
Si oui, dans quelles concentration

(b) CHEMICAL STABILITY Stabilité chimique	OXIDATION REDUCTION POTENTIAL Potentiel d'oxydoréduction	CHEMICAL OXYGEN DEMAND Demande chimique d'oxygène
	REACTIVITY WITH SEAWATER Réactivité avec l'eau de mer	CHANGE ON EXPOSURE TO ATMOSPHERE AND SUNLIGHT Changement au contact de l'atmosphère et de la lumière du soleil
(c) BIOCHEMICAL BEHAVIOR Comportement biochimique	BIOCHEMICAL OXYGEN DEMAND AT 20° Demande biochimique d'oxygène à 20°	BIOTRANSFORMATION Biotransformation
	SOLUBILITY IN ANIMAL OR PLANT LIPIDS Solubilité dans les lipides animaux et végétaux	IF SUBSTANCE IS A PESTICIDE, GIVE PCP REGISTRATION NO. OR COMMON NAME S'il s'agit d'un pesticide donner le numéro d'enregistrement des produits antiparasitaires ou le nom commun

30 BIOACCUMULATION BY MARINE ORGANISMS / Bioaccumulation par les organismes marins

(a) CONCENTRATION FACTOR FOR FISH, MACRO INVERTEBRATES AND PLANKTON Facteur de concentration pour le poisson, les macro invertébrés et le plancton	(b) RATE OF UPTAKE AND RETENTION (biological half life) Taux d'ingestion et de rétention (demi-vie biologique)

(c) TAINTING, COLOUR CHANGE AND OTHER UNDESIRABLE CONTAMINANT EFFECTS ON SEAFOOD
Coloration, changement de couleur et autres effets de contamination indésirables sur les fruits de mer

31 TOXICITY TO MARINE ORGANISMS (96 hour LC_{50} in mg/l)
Toxicité pour les organismes marins (CL_{50} après 96 heures, en mg/l)

32 DESCRIBE HAZARD TO HUMAN HEALTH BY / Décrire les dangers pour la santé humaine par

(a) ORAL INTAKE (LD_{50} in mg/kg) Ingestion orale (DL_{50} en mg/kg)	(b) SKIN CONTACT Contact avec la peau

(c) INHALATION / Inhalation

When the applicant is a corporation, give the title or capacity and telephone number of the person signing this application.
Si le requérant est une société, donner le titre ou la fonction et le numéro de téléphone du signataire de la demande.

DATE	SIGNATURE OF APPLICANT / Signature du requérant	TITLE / Titre
		TEL. NO. / N° de tél.

Environment Canada / Environnement Canada

FORM / FORMULE 4

APPLICATION FOR A PERMIT TO DISPOSE OF A SHIP AIRCRAFT OR OTHER MAN MADE STRUCTURE AT SEA
DEMANDE D'AUTORISATION D'ABANDON D'UN BATEAU, D'UN AÉRONEF OU AUTRE OUVRAGE DE MAIN D'HOMME EN MER

PART A – BASIC INFORMATION / PARTIE A – RENSEIGNEMENTS GÉNÉRAUX

1 NAME OF APPLICANT / Nom du requérant

TEL. No / No de tél.

ADDRESS / Adresse

2 TYPE OF BUSINESS / Type d'entreprise

3 NAME OF INDIVIDUAL RESPONSIBLE FOR DISPOSAL ARRANGEMENTS ON BEHALF OF APPLICANT
Nom de la personne chargée des dispositions d'abandon au nom du requérant

NAME / Nom

TITLE / Titre

TEL. No / No de tél.

4 GIVE FULL DESCRIPTION OF SHIP, AIRCRAFT ETC. TO BE DISPOSED OF, INCLUDING, AS APPLICABLE
Donner une description complète du bateau, de l'aéronef, etc. à abandonner, y compris, s'il y a lieu

SHIP / Bateau

NAME OF SHIP / Nom du bateau

PORT OF REGISTRY / Port d'attache

OFFICIAL No / Numéro officiel

OVERALL LENGTH / Longueur hors tout

EXTREME BREADTH / Largeur au fort

OVERALL HEIGHT (Measured from bottom of keel to highest point of ship) / Hauteur hors tout (à partir de la partie inférieure de la quille au plus haut point du bateau)

DEADWEIGHT TONNAGE / Chargement en lourd

MAXIMUM DRAFT / Tirant d'eau max.

HULL MATERIAL / Matériau de coque

TYPE OF ENGINES (if left on board) / Type de moteur (s'il est laissé à bord)

MAT'L AND WEIGHT OF BALLAST LEFT ON BOARD / Matériel et poids de lest laissé à bord

NAME OF OWNER / Nom du propriétaire

ADDRESS OF OWNER / Adresse du propriétaire

AIRCRAFT / Aéronef

TYPE / Type

MODEL / Modèle

SERIAL NUMBER / Numéro de série

NATIONALITY / Nationalité

REGISTRATION MARKS / Marques d'immatriculation

CONSTRUCTION MATERIAL / Matériau de construction

ESTIMATED WEIGHT OF ENGINES IF LEFT IN PLACE / Poids approximatif des moteurs s'ils sont laissés en place

TOTAL WEIGHT OF AIRCRAFT / Poids total de l'aéronef

OVERALL LENGTH / Longueur hors tout

OVERALL HEIGHT / Hauteur hors tout

WINGSPAN / Envergure

NAME OF OWNER / Nom du propriétaire

ADDRESS OF OWNER / Adresse du propriétaire

UNREGISTERED VEHICLES PLATFORMS OR OTHER MAN MADE STRUCTURES
Véhicules non immatriculés plate-formes ou autres ouvrages de main d'homme

NAME OR NUMBER (if any) / Nom ou numéro (s'il y a lieu)

DIMENSIONS / Dimensions

TOTAL WEIGHT (Attach sketch or drawing, if available) / Poids total (joindre un dessin ou un croquis si possible)

PRINCIPAL MATERIALS OF CONSTRUCTION / Principaux matériaux de construction

ESTIMATED WEIGHT OF EACH / Poids approximatif de chacun

NAME OF OWNER / Nom du propriétaire

ADDRESS OF OWNER / Adresse du propriétaire

WHAT WAS USUAL OR LAST CARGO? / Quelle était la cargaison habituelle ou la dernière cargaison?

HAVE ALL CARGO FUEL AND STORES BEEN REMOVED PRIOR TO DISPOSAL?
Est-ce que tout le carburant et l'approvisionnement ont été enlevés avant l'abandon?

☐ YES / Oui ☐ NO / Non

IF NOT, COMPLETE THE APPLICABLE PORTIONS OF FORM I AND ATTACH TO THIS APPLICATION
Sinon, remplir les parties de la formule I qui s'appliquent et les joindre à la demande

5 REASONS FOR DISPOSAL AT SEA
Raisons de l'abandon en mer

6 STATE WHY ALTERNATE METHODS OF DISPOSAL ARE NOT ACCEPTABLE
Indiquer pourquoi les autres méthodes d'élimination sont inacceptables

7 GIVE PARTICULARS IF DISPOSAL AT SEA OF SHIPS, AIRCRAFT, ETC. WAS CARRIED OUT IN THE PAST
Donner les détails des opérations d'abandon en mer de bateaux, d'aéronefs, etc., effectuées dans le passé, s'il y a lieu

8 NAME OF CARRIER (if not applicant) Nom du transporteur (s'il ne s'agit pas du requérant)		ADDRESS / Adresse	TEL. Nº / Nº de tél
9 NAME OF CARRIER'S AGENT (if applicable) Nom de l'agent du transporteur (s'il y a lieu)		ADDRESS / Adresse	TEL. Nº / Nº de tél
10 NAME OF INDIVIDUAL RESPONSIBLE FOR DISPOSAL ARRANGEMENTS ON BEHALF OF CARRIER Nom de la personne chargée des opérations d'abandon au nom du transporteur	NAME / Nom	TITLE / Titre	TEL. Nº / Nº de tél

PART B – DETAILS OF DISPOSAL ARRANGEMENTS / PARTIE B – DISPOSITIONS D'ABANDON

11 PROPOSED DATE OF DISPOSAL
Date(s) prévue(s) de l'abandon

12 DESCRIBE ROUTE TO BE FOLLOWED AND GEOGRAPHICAL COORDINATES OF PROPOSED DISPOSAL SITE
Donner le tracé qui sera suivi et les coordonnées géographiques du lieu d'abandon proposé

13 POINT OF DEPARTURE
Point de départ

14 DEPTH OF SEA AT PROPOSED DISPOSAL SITE
Profondeur de la mer au lieu d'abandon

15 WILL SHIP OR AIRCRAFT ETC. PROCEED TO PROPOSED DISPOSAL SITE UNDER ITS OWN POWER. IF NOT GIVE DETAILS
Le bateau ou l'aéronef, etc. se rendra-t-il lui même au lieu d'abandon proposé? Sinon, expliquer

16 ESTIMATED TIME REQUIRED AT DISPOSAL SITE TO CARRY OUT DISPOSAL OPERATION
Temps approximatif de l'opération au lieu d'abandon

17 HOW WILL THE SHIP OR AIRCRAFT, ETC., BE PREPARED FOR DISPOSAL TO ENSURE THAT IT WILL SINK AND REMAIN IN PLACE?
De quelle façon le bateau ou l'aéronef, etc. sera-t-il préparé pour l'abandon afin qu'il coule et reste en place?

18 DESCRIBE OTHER WORK CARRIED OUT TO ENSURE THAT THE SHIP OR AIRCRAFT DOES NOT EMIT SUBSTANCES SUBSEQUENT TO DISPOSAL
Décrire les autres préparatifs destinés à faire en sorte que le bateau ou l'aéronef ne laisse échapper aucune substance après l'abandon.

When the applicant is a corporation, give the title or capacity and telephone number of the person signing this application.

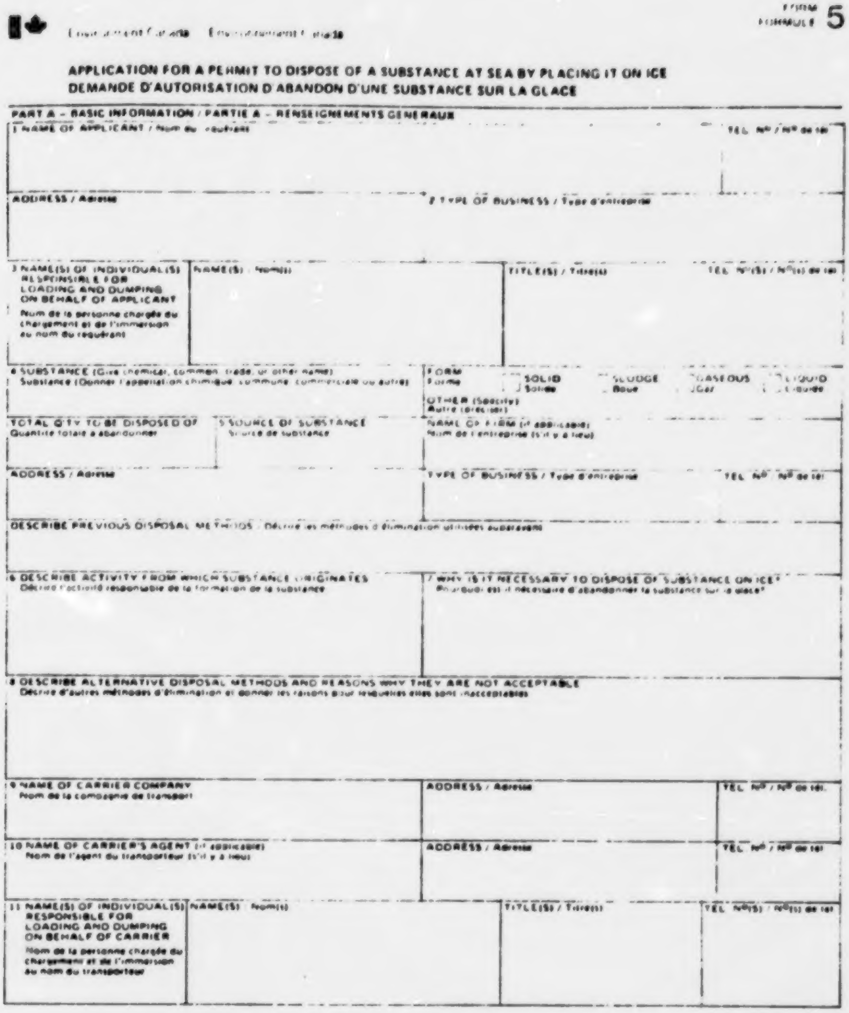
Si le requérant est une société, donner le titre ou la fonction et le numéro de téléphone du signataire de la demande.

DATE

SIGNATURE OF APPLICANT / Signature du requérant

TITLE / Titre

TEL. NO. / Nº de tél.



Environment Canada Environnement Canada

FORM
FORMULE 5

APPLICATION FOR A PERMIT TO DISPOSE OF A SUBSTANCE AT SEA BY PLACING IT ON ICE
DEMANDE D'AUTORISATION D'ABANDON D'UNE SUBSTANCE SUR LA GLACE

PART A – BASIC INFORMATION / PARTIE A – RENSEIGNEMENTS GENERAUX

1 NAME OF APPLICANT / Nom du requérant
TEL. Nº / Nº de tél.

ADDRESS / Adresse
2 TYPE OF BUSINESS / Type d'entreprise

3 NAME(S) OF INDIVIDUAL(S) RESPONSIBLE FOR LOADING AND DUMPING ON BEHALF OF APPLICANT
Nom de la personne chargée du chargement et de l'immersion au nom du requérant
NAME(S) / Nom(s)
TITLE(S) / Titre(s)
TEL. Nº(S) / Nº(s) de tél.

4 SUBSTANCE (Give chemical, common, trade, or other name)
Substance (Donner l'appellation chimique, commune, commerciale ou autre)
FORM
Forme
☐ SOLID Solide
☐ SLUDGE Boue
☐ GASEOUS Gaz
☐ LIQUID Liquide
OTHER (Specify)
Autre (préciser)

TOTAL Q'TY TO BE DISPOSED OF
Quantité totale à abandonner
5 SOURCE OF SUBSTANCE
Source de substance
NAME OF FIRM (if applicable)
Nom de l'entreprise (s'il y a lieu)

ADDRESS / Adresse
TYPE OF BUSINESS / Type d'entreprise
TEL. Nº / Nº de tél.

DESCRIBE PREVIOUS DISPOSAL METHODS / Décrire les méthodes d'élimination utilisées auparavant

6 DESCRIBE ACTIVITY FROM WHICH SUBSTANCE ORIGINATES
Décrire l'activité responsable de la formation de la substance
7 WHY IS IT NECESSARY TO DISPOSE OF SUBSTANCE ON ICE?
Pourquoi est-il nécessaire d'abandonner la substance sur la glace?

8 DESCRIBE ALTERNATIVE DISPOSAL METHODS AND REASONS WHY THEY ARE NOT ACCEPTABLE
Décrire d'autres méthodes d'élimination et donner les raisons pour lesquelles elles sont inacceptables

9 NAME OF CARRIER COMPANY
Nom de la compagnie de transport
ADDRESS / Adresse
TEL. Nº / Nº de tél.

10 NAME OF CARRIER'S AGENT (if applicable)
Nom de l'agent du transporteur (s'il y a lieu)
ADDRESS / Adresse
TEL. Nº / Nº de tél.

11 NAME(S) OF INDIVIDUAL(S) RESPONSIBLE FOR LOADING AND DUMPING ON BEHALF OF CARRIER
Nom de la personne chargée du chargement et de l'immersion au nom du transporteur
NAME(S) / Nom(s)
TITLE(S) / Titre(s)
TEL. Nº(S) / Nº(s) de tél.

PART B – DETAILS OF DISPOSAL ARRANGEMENTS / PARTIE B – DÉTAILS DES DISPOSITIONS D'ABANDON

12 GIVE PARTICULARS OF THE MANNER IN WHICH THE SUBSTANCE IS TO BE DISPOSED OF, WILL BE TRANSPORTED TO THE PROPOSED SITE OF DISPOSAL AND THE ROUTE TO BE FOLLOWED. STATE NAME OR NUMBER IF ANY OF VEHICLE TO BE USED. ALSO GIVE NAME AND ADDRESS OF VEHICLE OWNER.

Expliquer la façon dont la substance à abandonner sera transportée au lieu d'abandon proposé et le trajet qui sera suivi en donnant le nom ou le numéro du véhicule utilisé s'il y a lieu, de même que le nom et l'adresse du propriétaire

13 POINT OF DEPARTURE Port de départ	14 DATES ON WHICH PROPOSED DISPOSAL WILL BE CARRIED OUT Date de l'abandon proposé
15 DESCRIBE PACKAGING OR CONTAINERIZATION OF THE WASTE Décrire la méthode d'emballage ou de conditionnement des déchets	16 GEOGRAPHICAL COORDINATES & APPROX. SHAPE OF PROPOSED DISPOSAL SITE (submit suitably marked chart or map) Coordonnées géographiques et forme approx. du lieu d'abandon proposé (joindre une carte ou un plan convenablement annotés) Lat. Long.
17 IS THE SUBSTANCE TO BE DISPOSED OF EDIBLE BY FAUNA COMMON TO THE REGION? La substance à abandonner est-elle comestible par la faune commune à la région?	18 WHAT IS THE MINIMUM DEPTH OF WATER AT THE PROPOSED SITE WHEN ICE COVER IS PRESENT? Quelle est la profondeur minimale de l'eau au lieu proposé lorsque la couverture de glace est prise?

PART C – PHYSICAL, CHEMICAL AND BIOLOGICAL CHARACTERISTICS OF SUBSTANCES / **PARTIE C – PROPRIÉTÉS PHYSIQUES, CHIMIQUES ET BIOLOGIQUES DE LA SUBSTANCE**

NOTE In carrying out any necessary tests the analyst should follow documented procedures and be prepared to describe these procedures in detail.

NOTE Pour effectuer les essais nécessaires, l'analyste doit suivre les méthodes indiquées et être prêt à les décrire en détail.

19 PHYSICAL PROPERTIES / Propriétés physiques

(a) LIQUIDS Liquides	SPECIFIC GRAVITY Poids spécifique	VAPOUR PRESSURE Tension de vapeur	MISCIBILITY WITH SEAWATER Miscibilité avec l'eau de mer	VISCOSITY Viscosité	ODOUR Odeur	COLOUR Couleur
(b) SOLIDS SOLUBLE IN WATER Solides solubles dans l'eau	SPECIFIC GRAVITY Poids spécifique	SOLUBILITY IN SEAWATER Solubilité dans l'eau de mer			ODOUR Odeur	COLOUR Couleur
(c) SOLIDS INSOLUBLE IN WATER Solides insolubles dans l'eau	PARTICLE SIZE DISTRIBUTION AND SETTLING RATE IN SEAWATER Grosseur des particules et taux de sédimentation dans l'eau de mer				ODOUR Odeur	COLOUR Couleur

20 CHEMICAL AND BIOCHEMICAL PROPERTIES / Propriétés chimiques et biochimiques

(a) ARE SUBSTANCES NAMED IN SCHEDULES I AND II OF THE ACT PRESENT? ☐ YES ☐ NO
Y a-t-il des substances mentionnées aux annexes I et II de la Loi? Oui Non

IF YES, IN WHAT CONCENTRATIONS?
Si oui, dans quelles concentrations?

(b) CHEMICAL STABILITY Stabilité chimique	OXIDATION REDUCTION POTENTIAL Potentiel d'oxydoréduction	CHEMICAL OXYGEN DEMAND Demande chimique d'oxygène
	REACTIVITY WITH SEAWATER Réactivité avec l'eau de mer	CHANGE ON EXPOSURE TO ATMOSPHERE AND SUNLIGHT Changement au contact de l'atmosphère et de la lumière du soleil
(c) BIOCHEMICAL BEHAVIOR Comportement biochimique	BIOCHEMICAL OXYGEN DEMAND AT 20° Demande biochimique d'oxygène à 20°	BIOTRANSFORMATION Biotransformation
	SOLUBILITY IN ANIMAL OR PLANT LIPIDS Solubilité dans les lipides animaux ou végétaux	IF SUBSTANCE IS A PESTICIDE, GIVE PCP REGISTRATION NO. OR COMMON NAME S'il s'agit d'un pesticide, donner le numéro d'enregistrement des produits antiparasitaires ou le nom commun

21 BIOACCUMULATION BY MARINE ORGANISMS / Bio-accumulation par les organismes marins

(a) CONCENTRATION FACTOR FOR FISH, MACROINVERTEBRATES AND PLANKTON
Facteur de concentration pour le poisson, les macro-invertébrés et le plancton

(b) RATE OF UPTAKE AND RETENTION (biological half life)
Taux d'ingestion et de rétention (demi-vie biologique)

(c) TAINTING, COLOUR CHANGE AND OTHER UNDESIRABLE CONTAMINANT EFFECTS ON SEAFOOD
Coloration, changement de couleur et autres effets de contamination indésirables sur les fruits de mer

22 TOXICITY TO MARINE ORGANISMS (96 hour LC_{50} in mg/l)
Toxicité pour les organismes marins (CL_{50} après 96 heures, en mg/l)

23 DESCRIBE HAZARD TO HUMAN HEALTH BY / Décrire les dangers pour la santé humaine par

(a) ORAL INTAKE (LD_{50} in mg/kg)
Ingestion orale (DL_{50} en mg/kg)

(b) SKIN CONTACT
Contact avec la peau

(c) INHALATION / Inhalation

When the applicant is a corporation, give the title or capacity and telephone number of the person signing this application.

Si le requérant est une société, donner le titre ou la fonction et le numéro de téléphone du signataire de la demande.

DATE	SIGNATURE OF APPLICANT / Signature du requérant	TITLE / Titre
		TEL. NO. / Nº de tél.

APPENDIX C - REGULATORY INSTRUMENT DEVELOPMENT PROCESS

In 1982 Environment Canada introduced a "generic" process for the development of regulatory instruments. This is a systematic approach to identifying anticipated or existing threats and hazards to the environment or human health, and to developing regulations designed to change human or corporate behavior to correct and prevent the identified threat or hazard. This process is applicable to ODCA. It will be applicable to CEPA when it is passed.

The concepts of public consultation and early notice of regulatory initiatives (a regulatory initiative could include regulatory policies, objectives, rules, methods and approaches to program delivery and compliance) are central to the process. These concepts are compatible with the Regulatory Reform Strategy requirements that all departments and agencies: (a) consult with the public on regulatory policies, objectives, rules, methods and approaches to program delivery and compliance; and (b) improve communication of regulatory information to the public and, thereby, enhance public participation in the regulatory process.

C&P also notes that central facets of the regulatory development process are the application of the Guiding Principles of the Regulatory Policy as well as the implementation of the Citizen's Code of Regulatory Fairness. Consideration of these will ensure that all interests affected by regulatory activity are able to participate fully in the regulatory process.

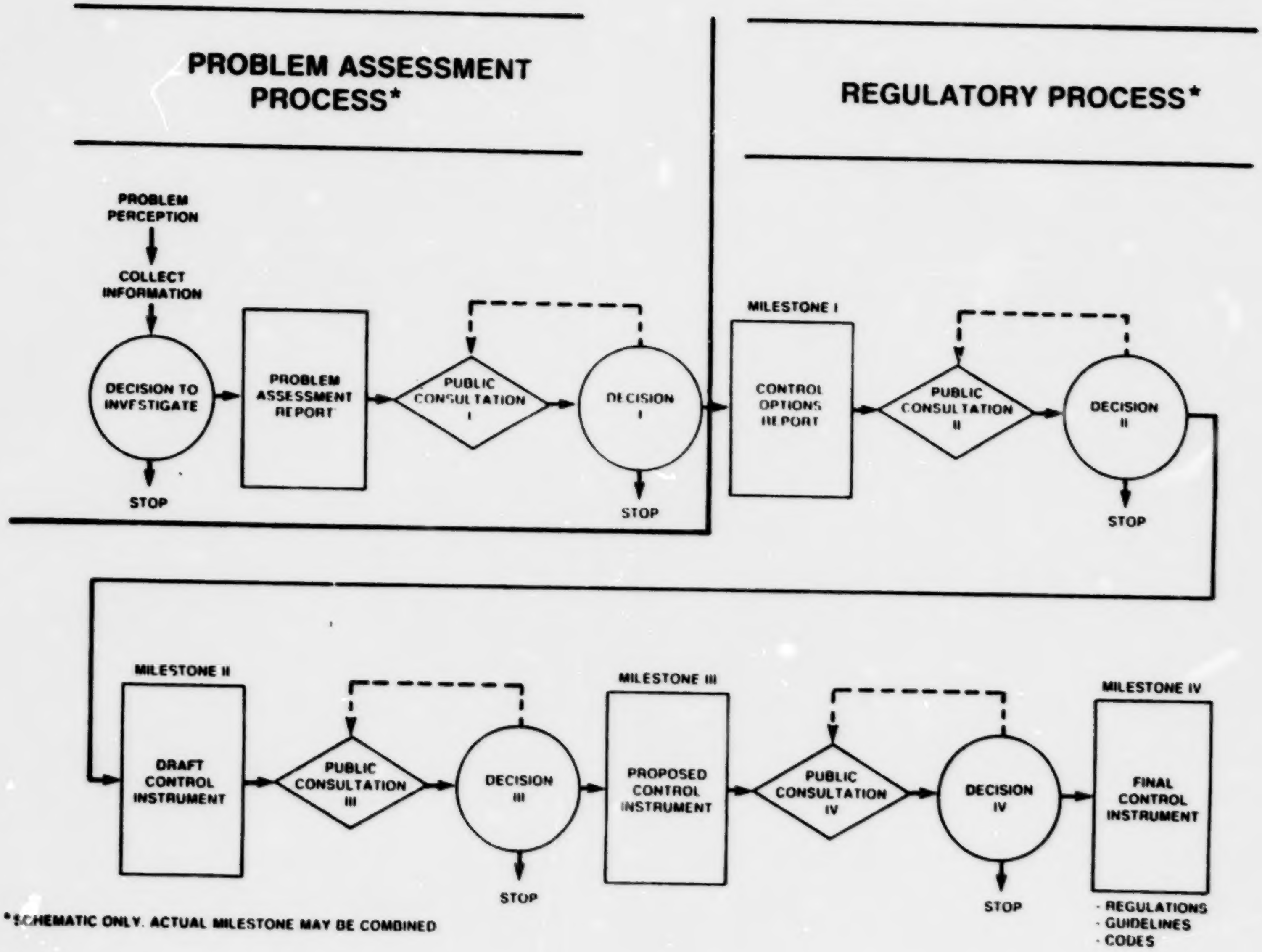
The Regulatory Instrument Development Process consists of three distinct phases. These are:

(a) Problem assessment;
(b) Regulatory instrument development; and
(c) Implementation, review and evaluation.

(a) Problem assessment

In keeping with its mandate under ODCA, Environment Canada undertakes problem assessments of anticipated or existing threats to the environment and to human health.

In many cases, a problem assessment reveals the need or justification for action to combat and environmental threat. Possible regulatory options such as regulations, guidelines, standards and codes of practice, as well as non-regulatory options such as economic instruments or to use economic instruments for the implementation of public policy has been taken. An initiative commences with this decision and it will then be noted in the Annual


PROBLEM ASSESSMENT PROCESS*
REGULATORY PROCESS*
PROBLEM PERCEPTION
COLLECT INFORMATION
DECISION TO INVESTIGATE
STOP
PROBLEM ASSESSMENT REPORT
PUBLIC CONSULTATION I
DECISION I
STOP
MILESTONE I
CONTROL OPTIONS REPORT
PUBLIC CONSULTATION II
DECISION II
STOP
MILESTONE II
DRAFT CONTROL INSTRUMENT
PUBLIC CONSULTATION III
DECISION III
STOP
MILESTONE III
PROPOSED CONTROL INSTRUMENT
PUBLIC CONSULTATION IV
DECISION IV
STOP
MILESTONE IV
FINAL CONTROL INSTRUMENT
- REGULATIONS
- GUIDELINES
- CODES

*SCHEMATIC ONLY. ACTUAL MILESTONE MAY BE COMBINED

CHART 13

Regulatory Plan which is submitted to Cabinet. The status of all such initiatives is reported semi-annually in the Regulatory Agenda. All regulatory initiatives are developed according to the Regulatory Instrument Development Process.

(b) Regulatory instrument development

Regulatory instrument development consists of four principal milestones with publicly available documents as key features of the first two milestones. The milestones are as follows:

Milestone 1 - Control options

Control options including, where necessary, options outside the department are identified. The Control Options document describes each control option and addresses its technical, socio-economic, administrative, and legal implications. It will also address non-regulatory options such as economic instruments. Initial Regulatory Impact Analysis and Compliance Policy will commence at this stage.

Milestone II - Draft control instrument

Once a regulatory control option has been selected, the specific control instrument is drawn up (e.g. regulation, code of practice, guideline). A draft Control Instrument document is issued which includes explanatory notes describing the selected control option and its regulatory impact. This report may also summarize earlier reports and/or comments received from interested parties.

Milestone III - Proposed control instrument

This milestone represents the pre-publication stage in the regulatory process and will be applicable when notification in the Canada Gazette, Part I, is required. Also, the formal Regulatory Impact Analysis Statement (RIAS) will be published at this time.

Milestone IV - Final control instrument

This milestone represents the formal announcement of the control instrument by publication in the Canada Gazette, Part II, where applicable and/or through other means.

Each milestone is an independent step at the end of which C&P exercises administrative discretion, deciding either to proceed to a subsequent milestone, revert to a preceding milestone or terminate the initiative. The process allows for some form of public consultation at each milestone. In some instances, these milestones may be combined.

Although an analysis of the regulatory impact (socio-economic factors, etc.) is taken into consideration at all stages of each initiative, a RIAS will be prepared only when a regulation or an amendment to a regulation is the proposed control instrument. The RIAS is released for public consultation along with the proposed regulation.

(c) Implementation, review and evaluation

This phase is added to the process to ensure compliance with Central Agency requirements for Regulatory Review and Evaluation, as well as to ensure the predictability of the exercise of discretionary powers and inter-regional consistency in the administration of regulations (enforcement and compliance).

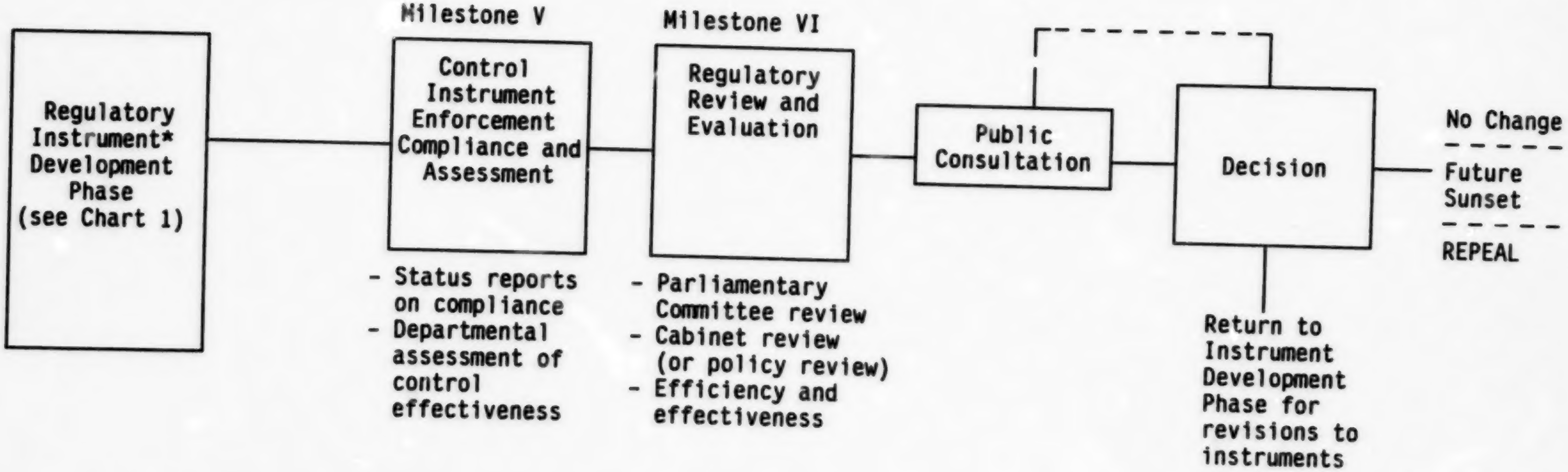
Milestone V - Control instrument enforcement, compliance and assessment

This milestone represents the implementation phase which is initiated once a regulatory instrument is formally promulgated. Documentation at this point will include records of enforcement actions, compliance status reports or departmental assessments of the effectiveness of the regulatory instrument in meeting its objective. Inspectors' Manuals and Training and Compliance Policies will be developed at this stage.

Milestone VI - Regulatory review and evaluation

Environment Canada's regulatory programs are subject to corporate review for continued relevance and impact at least once every seven years as part of the ongoing evaluation of departmental programs, under the scrutiny of the OCG and in consultation with the Regulatory Affairs Secretariat. The Special Committee of Council will also review all regulatory programs over a seven-year period, directly or through overview of the corporate reviews, and may call for special reviews of programs that involve more than one department. Each Parliamentary committee will review regulatory programs within its purview over a ten-year period.

CHART 14 - REGULATORY INSTRUMENT IMPLEMENTATION, REVIEW AND EVALUATION


Regulatory Instrument* Development Phase (see Chart 1)
Milestone V
Control Instrument Enforcement Compliance and Assessment
- Status reports on compliance
- Departmental assessment of control effectiveness
Milestone VI
Regulatory Review and Evaluation
- Parliamentary Committee review
- Cabinet review (or policy review)
- Efficiency and effectiveness
Public Consultation
Decision
Return to Instrument Development Phase for revisions to instruments
No Change
Future Sunset
REPEAL

*"Regulatory Instrument" is broadly defined to include all tools available for changing human/economic behavior.

APPENDIX D - DOCUMENTS REVIEWED DURING THE EVALUATION ASSESSMENT*

Legislation (including amendments) and regulations:

- Canada Water Act;
- Clean Air Act;
- Department of the Environment Act;
- Environmental Contaminants Act;
- Ocean Dumping Control Act;
- Fisheries Act;
- Pest Control Products Act;
- Transportation of Dangerous Goods Act.

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- Regulatory Programs.

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Socio-Economic Impact Analysis of proposed Federal Regulation on Arsenic from Gold Roasting, by Environmental Protection Service, Environment Canada (May, 1979).

Analysis of proposed Revisions to Canadian Light Duty Motor Vehicle Emission Standards, by Pilorusso Research Associates Inc., for Environmental Protection Service, Environment Canada (August, 1984).

Socio-Economic Impact Analysis of Lead Phase-Down Control Options, Environmental Protection Service, Environment Canada (February, 1984).

Socio-Economic Impact Analysis of Draft Guidelines for the Yukon Placer Mining Industry, by Environmental Protection Service, Environmental StrategiesDirectorate and Canadian Resources Ltd. (March, 1983).

Preliminary Socio-Economic Impact Analysis for Transportation of Dangerous Goods Act Regulations: Hazard Assessment Class 9.2 commodities and class 9.3 waste, by M.M. Dillon for Environment Canada (1981).

Socio-Economic Impact Analysis of Chlorobiphenyl Regulation No.2 (Product) and Chlorobiphenyl Regulation No.3 (Release), by Environmental Protection Service, Environment Canada (Dec. 1983).

Final Report on the Assessment of the Economic Impact on the Automotive Parts/Service Industry of Proposed Gasoline Lead Content Regulations, by Hickling Partners Inc. for Environment Canada (March, 1981).

Socio-Economic Evaluation of Environmental Contaminants Act Amendments, by Socio-Economic Evaluation Work Group, Environment Canada (Jan. 1987).

APPENDIX E - PERSONS CONSULTED DURING THE EVALUATION

To economize in the use of resources and to minimize the burden on respondents at a time when consultations on the new Canadian Environmental Protection Act were underway, the interview programs for the following evaluations were conducted simultaneously:

Ocean Dumping and Marine Program
Industrial Effluent and Emission Controls
Commercial/Toxic Chemicals

Opinions of the persons listed were sought on as much of this area of inquiry as they felt qualified to discuss or on specific points within one or other of these evaluations.

Affiliations and titles given are those at the time of consultation.

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CHART 19 - PERSONS CONSULTED, BY CATEGORY AND LOCATION

	NATIONAL CAPITAL REGION	ATLANTIC CANADA	QUEBEC	ONTARIO	PRAIRIES	BRITISH COLUMBIA	TERRI- TORIES	INTERNA- TIONAL	TOTAL
Environment Canada	28	5	2			3	2		40
Central agencies and other federal department	25	2	2		1				30
Provincial governments		1		3					4
Municipal governments				1					1
Industry	8	1	3	5	2	2			21
Labour	1								1
Environmental NGOs	4	3	6	6	3	5		1	28
Consumer groups	1					3			4
Public health interests				1					1
Academia		3	5	14	1	2			25

APPENDIX F - DUMPING OF NUCLEAR WASTE

Since 1967 the dumping of radioactive waste has been subject to international control. The North Atlantic received these wastes during the past two decades, but it is still difficult to predict the chemical and biological effects on the marine environment of radioactive waste. The dumping of nuclear waste at sea stopped in 1983.

Chart provides information on the trends in the dumping of nuclear wastes at sea. The total amount dumped as well as the level of radioactivity (alpha-, beta-gamma-, and tritium-activity) are indicated.

CHART 16 - DUMPING OF NUCLEAR WASTE AT SEA, 1967-1986

Year	Gross weight (Tonnes)	Approximate radioactivity (Curies) Alpha	Beta-gamma	Tritium
1967	10,900	250	7,600 (a)	--
1969	9,180	500	22,000 (a)	--
1971	3,970	630	11,200 (a)	--
1972	4,130	680	21,600 (a)	--
1973	4,350	740	12,600 (a)	--
1974	2,270	420	--	--
1975	4,460	780	30,500	100,000 (b)
1976	6,770	880	32,500	30,000 (b)
1977	5,600	950	36,300	21,000 (b)
1978	8,040	1,100	43,000	31,900
1979	5,415	1,415	40,925	36,600
1980	8,391	1,855	83,092	42,250
1981	9,435	2,177	79,195	98,135
1982	11,693	1,428	49,539	74,372
1983	0	0	0	77,449
1984	0	0	0	0
1985	0	0	0	0
1986	0	0	0	0
		0	0	0
TOTAL	94,604	13,805	470,051	511,706

Notes: a) Including tritium.
b) Estimated data.

Amounts of radioactivity up to 1974 were recorded under two categories: alfa activity and beta-gamma activity including tritium. For the years 1974, 1975 and 1976, the amounts of tritium were estimated and since 1977 tritium activity was recorded separately.

Source: OECD Environmental Data Compendium 1987.

APPENDIX G - STEERING COMMITTEE AND EVALUATION TEAM

Steering Committee

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George M. Cornwall	Director, Management and Emergencies Branch, C&P
P.R.W. Gore	Director, Evaluation Branch, CPG

Evaluation Team

Project Manager	Sonya Strasbourg	Evaluation Branch
	Leif Skulstad	Agriculture Canada
	Susan Payne	Wilfrid Laurier University

APPENDIX H - MARINE POLLUTION PATHWAYS

As noted in Section 4, a variety of pathways contribute to pollution of the oceans and seas. An examination of these pathways is necessary to set the ocean dumping issue, which is not at the present time a major source of pollution, in its proper context.

In fact, the dumping of wastes into the ocean makes a minor contribution to marine pollution composed with land-based discharges, airborne pollutants, and other inputs. However, the marine pollution problems faced are similar. Currently, the LDC plays a key international role in promoting the control of all these sources of marine pollution.

(a) The Air Pathway

Oceans are subject, like the land and lakes, to Long-Range Transportation of Air Pollutants. While there is no danger of acidification, as is the case with smaller bodies of water, atmospheric pollution has been shown to be the major contributor to marine pollution. Heavy metals from coal-burning plants and other industrial processes appear to reach the seas via the atmosphere*. The question of incineration at sea, a practice which could have a bearing on marine pollution via the atmospheric pathway, is dealt with in detail below.

(b) The Land Pathway

Rivers and harbors have long been used as "cheap" vehicles for waste disposal, which is to say that natural regenerative mechanisms at one time were able to handle limited levels of pollution. Loading of pollutants subsequently increased, but costs were still calculated on a short-term basis without regard for downstream costs. Today, wastes pose much more serious problems, both in terms of volume of waste (Halifax Harbor) and of toxicity (St. Lawrence River). Direct runoff of agricultural chemicals, etc. is more a problem of inland waters.

(c) Marine Pollution from Ocean Use

Chart 8 indicates major uses of the oceans and pollution associated with those uses. Such a matrix does not, however, indicate the relative importance of each type although an "x" indicates that pollution reaches the threshold of significance.

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* Atmospheric pollution is blamed for a relatively high heavy metal concentration in some North Sea water samples. Norton, R.L., "Assessment of Pollution Loads to the North Sea"; Water Research Centre Technical Report; August, 1982.

CHART 17 - USES OF THE OCEANS AND ASSOCIATED POLLUTION

	OIL	PLASTICS	RADIONUCLIDES	TOXIC CHEMICALS	DREDGE SPOIL	REFUSE. NON PLASTIC	SEWAGE. ORGANIC
TRANSPORTATION	X	X		X	X	X	X
NAVAL OPERATIONS	X	X					X
LOST AND DAMAGED NUCLEAR VESSELS			X				
COMMERCIAL FISHING AND WHALING	X	X				X	X
PETROLEUM EXPLORATION/ EXPLOITATION--SEA	X			X	X	X	X
--ICE	X			X	X	X	X
MINERAL EXPLORATION/EXPLOITATION	X				X	X	
RECREATION/NON-COMMERCIAL FISHING	X	X				X	
AQUACULTURE				X			X
AVIATION--REFUELLING OVER SEA	X						
--LOST NUCLEAR CARGO			X				
RESEARCH	X		X				
WASTE DISPOSAL	X	X		X		X	X

Notes to Chart

(a) Oil - Oil tankers, both in service and when wrecked, pose a major problem. In 1975, the U.S. National Academy of Science estimated the total amount of oil entering the oceans at 6.1 million tons per year.

Shipping routes are increasingly being contaminated by tarballs, oilslicks, and in some areas, elevated levels of heavy metals. Monitoring of some major shipping lanes found that between .05 and 0.1 per cent of the sea surface was covered by oil film at any given time.

While the offshore oil and gas industry is the most visible threat to ocean quality, it is not the greatest. Statistics on pollution in the North Sea showed that the largest sources of nutrients and toxic metals were the atmosphere and riverine sources, despite the intensity of offshore oil and gas industry activity*. The oil industry does, however, contribute a variety of other pollutants to the environment, for example toxins in drilling fluids.

(b) Plastics - More than a million pounds of plastics are dumped into the sea each year, according to a 1987 report by a U.S. Congressional Merchant Marine and Fisheries Subcommittee on fisheries and wildlife conservation. Birds and marine mammals try to eat the objects, which often block their respiratory or digestive tracts, suffocating or starving them to death. Others become entangled in the objects and choke to death. Plastic trash is suspected of contributing to the decline of several species, including the northern fur seal, steller sea lion, Hawaiian monk seal and some sea turtle and seabird species. Six-pack rings are emerging as a major marine garbage problem but the fishing industry contributes an enormous amount of discarded nets, lines and other plastic cordage every year. Alabama Representative Don Young said at the hearing on the subcommittee's report that he believes the U.S. Navy is one of the biggest plastic polluters. The report estimated that plastics killed a million sea birds every year and thousands of mammals.

(c) Lost and Damaged Nuclear Vessels - Most data on this subject are highly classified by the various nuclear navies. We know that the Americans lost the U.S.S. Thresher in April 1963 in the Western Atlantic, and that the Russians lost an unidentified nuclear-powered attack submarine in the 8,000 metre-deep Kuril Trench in the summer of 1983, and that between the two incidents there have been a number of other accidents at sea, including the meltdown of a reactor on the icebreaker Lenin in Arctic waters in 1966 or 1967. There are an estimated 389 nuclear-powered vessels worldwide driven by an estimated 586 marine reactors, and a number of non-nuclear naval vessels carry nuclear stores*. Up to 1977, the Stockholm International Peace Research Institute reported 42 accidents involving nuclear shipping, and in 1966 the San Francisco Centre for Investigative Reporting documented 99 more, including 46 involving the nuclear power plants of the vessels.

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* Norton, 1982, p. 28.

(d) Aquaculture - The Brundtland World Commission on Environment and Development noted in its April 1987 report:

"Fisheries and aquaculture are critical to food security in that they provide both protein and employment. The greater part of world fish supply comes from marine fisheries, which yielded 76.8 million tons in 1983. Landings have increased by 1 million tons per year over the past few years; by the end of the century, a catch of around 100 million tons should be possible. This is well short of the projected demand. There are indications that much of the naturally available freshwater fish stocks are fully exploited or damaged by pollution.

Aquaculture, or 'fish-farming', which differs from conventional fishing in that fish are deliberately reared in controlled water bodies, can help meet future needs. Yields from aquaculture have doubled during the last decade and now represent about 10 per cent of world production of fishery products. A five- to ten-fold increase is projected by the year 2000, given the necessary scientific, financial, and organizational support. Aquaculture can be undertaken in paddy fields, abandoned mining excavations, small ponds, and many other areas with some water, as well as on various commercial scales: individual, family, cooperative, or corporate. The expansion of aquaculture should be given high priority in developing and developed countries."

Aquaculture represents a use of the marine fringe, and a largely non-polluting use, although there is increasing concern over the effects of tributyltin (TBT) compounds, potent biocides, in the latest generation of antifouling paints used in aquaculture installations, such as fish pen nets, and on small boats. It has been noted that organotin levels are relatively low in areas of commercial shipping activity but high in areas where small craft are numerous. Levels are sufficiently high to cause chronic toxic effects in sensitive organisms at the majority of sites surveyed by

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* For example, aircraft carriers, submarine depot ships, and transports.

J.J. Cleary and A.R.D. Stebbing of the British Institute for Marine Environmental Research*. TBT has been found in per-reared salmon in the United States, and Agriculture Canada has taken action to prevent sale of products containing organotins for use in aquaculture.

Some of the feeding practices aquaculturists employ may also create anoxic conditions, and oblige them to move their installations continually, leaving damaged ecological systems behind them. But as Brundtland suggests, aquaculture is of considerable potential importance and particularly vulnerable to the effects of uncontrolled ocean dumping and other pollution.

Although toxic and radioactive materials pose the greatest hazard, aquaculture may also be badly affected--as may fisheries in general--by municipal sewage and by dredged material which is simply moved from the bottom of one piece of water to another.

(e) Aviation--Lost Nuclear Cargo - In 1980 the U.S. Defense Department reported that up to that time there had been 27 serious accidents involving U.S. nuclear weapons. Bombs lost at sea in at least two accidents in 1968--off Thule, Greenland, and off Palomares, Spain--were not recovered. At least one of the Thule bombs ruptured and plutonium escaped.

(f) Research - A permit for the use of radioactive tracers (9.25×10^8 becquerels) in a sediment transport study was issued in 1985 under the ODCA Regulations. Such calculated release for scientific purposes cannot be regarded as pollution. The release of oil has also been approved in connection with research into oil-cleanup techniques.

(g) Sewage - The disposal of vast quantities of waste from municipal sewers, particularly in the large ports, is a serious problem. Much of what is discharged by large cities such as New York appears to be returned by tides and currents, to the detriment of the quality of life of those who like to walk on beaches and possibly at some risk to public health**.

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* Clearly, J.J. and A.R.D. Stebbing, "Organotin in the Surface Microlayer and Subsurface Waters of Southwest England", Marine Pollution Bulletin, Vol. 18, No. 5, pp. 238-246, 1987.

** "Our Befouled Beaches", Newsweek, 27 July 1987.

The Marine Environmental Quality Working Group* reports that about 55,000 hectares of productive shellfish growing waters along 690 km of the British Columbia coastline are now closed to fishing because of bacterial contamination, mainly from sewage, and this area continues to increase. Discharges in large urban and industrialized centres of Vancouver and Victoria are also the source of elevated trace metals and organic contaminants in sediments and biota; however, sewage outfalls from smaller, non-industrial municipalities, discharging to locations amenable to dispersion by ocean currents, have not resulted in damage to marine life.

In the Arctic municipalities discharge untreated and primary treated sewage into coastal waters. Public health concerns may exist at communities which harvest shellfish from polluted waters and where marine mammals are butchered on polluted shorelines.

Municipal sewers discharge about 80,000 kg of high BOD materials and 105,000 kg of suspended solids daily in New Brunswick and Nova Scotia waters and about 780,000 kg BOD, 687,000 kg SS and 24,000 kg phosphorous is released daily into the St. Lawrence River drainage basin. In 1983 262 shellfish growing areas were closed to harvesting in the Maritime Provinces (140,000 ha total). Industries along the Atlantic coastline discharge complex wastes through the existing municipal wastewater collection systems, most of which are not treated.

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* Wells, P.G., L. Harding, J. Karau, and G.A. Packman, "Marine Environmental Quality in Canada", 1987.